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Non-hatching Bee Eggs.

Translated for the American Bee Journal, from the "Bienenzeitung."

Since I first stated, in my essay on alternation of generation, in "*Parthenogenesis in Insects*" (1858, page 62), the fact, based on an observation made by Mr. Hucke, that there are queen bees whose eggs, though regularly brooded, fail to hatch, the number of such instances noticed by others has become so multiplied that the Baron of Berlepsch—who once, in confident conviction to the contrary, boldly offered to give twenty of his finest Dzierzon hives stocked with Italian bees, for one such queen—has felt himself constrained to devote a special paragraph to these "addle eggs," in the new edition of his celebrated work on Bees and Bee-culture (1865, page 86).

In accordance with previous observers, Berlepsch infers, from the absence of brood, that the eggs are in reality addle. He assumes that they remain entirely without any advance towards development, though brooded; and looks for the cause of this in the defective constitution of the mother, in consequence of which she has lost, either wholly or partially, the ability to produce eggs having the germ of vitality. Of the same opinion is Professor Von Siebold, as is shown in a communication from him in a late number of the Bienenzeitung (1871, page 171), wherein he speaks of the addle condition of bee eggs, though he was unable to detect anything abnormal either in the queen sent to him, or in her eggs.

I confess that I coincided in this view respecting the nature of the eggs in the instance referred to, till the autumn of 1868, when I had opportunities in rapid succession to investigate three cases of so-called *addleness*, and then found reason to change my opinion.

The first of these cases occurred in the apiary of Mr. Dörr, in Mettenheim. On the 23d of September, I received from him the following communication respecting it:—"For two months past I have been watching the oviposition of a queen bred this year, continually finding eggs in the cells, but never any larvæ, sealed or unsealed. Three weeks ago I examined the hive, and found, as I had found four weeks before eggs, and eggs only. Inferring thence that a change of queen had taken place, I regarded these eggs as the first batch laid by the new queen. Since then, three weeks more have elapsed to-day, yet I found no trace whatever of brood; but, as before, eggs only. Under these circumstances the population of the hive having become much reduced, the area of oviposition is no longer large, yet I find in each cell in this area several eggs, and in some instances as many as five.* But I can readily see that always one of these eggs has been recently laid, because the larger number have already, by drying up, become shrivelled or shrunken—some being, as it were, mere shells. I would particularly request attention to the fact that oviposition appears to have proceeded regularly, for there always was one freshly laid egg in every such cell.—On the whole, I cannot account for the facts thus observed except on the assumption that this queen lays addle eggs only."

Mr. Dörr's kind offer to send me the queen and eggs for examination, was of course thankfully accepted; and I very soon received both, with an additional note from him, in which he stated that the queen was hatched on the 12th of July, when drones were plenty; and that she had been laying since the beginning of August, though no being, endowed with vitality, had ever issued from any of her eggs.

I found the queen, both externally and internally, perfectly normal and well-shaped. The ovaries and oviducts were richly stored with eggs in various stages of advancing maturity—those organs being still well developed for so late a period in the season. As in the case also, mentioned by Prof. Siebold, fertilization had taken place, and the spermatheca contained a dense mass of still mobile spematozoids. Their dissection furnished nothing that threw any light on the subject; but the matter assumed a different aspect when I subjected the eggs themselves to investigation.

Even the first egg placed under the microscope, though still fresh and of the usual appearance, satisfied me that the assumption that these eggs were addle, was altogether unfounded. Instead of an amorphous yolk, *it contained a perfectly formed embryo*, with the usual external and in-

* In several of the cells of the comb sent to me, I found even seven or eight eggs.—*Note, by Prof. Leuckart.*

ternal appendages (even the amnion); so that, without further knowledge of the circumstances, the egg had to be regarded as normally endowed with life. And all the rest of the eggs were just like the first one examined, so far as their shrivelled state allowed me to form a judgment—most of them, however, being so shrunken that the embryo, as such, could not be exhibited.

The "addleness" of these eggs was consequently merely apparent. Their failure to hatch did not result from lack of inherent power of development, but from the simple fact that the embryo, formed entirely as all such embryos are, had not power to emerge from the egg. Neither the egg shell nor the amniotic sac showed any abnormal thickening, and the embryo itself was entirely normal. There was consequently no physical or mechanical obstacle to prevent hatching; and there remains hence only the assumption that the seeming addleness of the eggs resulted from the premature death of the embryonal germ.

What I have here stated respecting the Dörr case holds good also as regards two others, which were presented to me almost simultaneously for investigation. Here also the apparently addle eggs contained normally developed embryos. One of these cases, however, was of special interest, because by it was furnished the experimental proof that the embryos do not hatch, even when the eggs containing them are placed in other hives. This fact was communicated to me by Mr. E. Böttger, teacher, of Weissenberg, in Saxony, in a note, as follows:—"Last summer I had two cases presented to me, in which young queens laid eggs incapable of producing living larvæ. The first of these queens was found in a colony belonging to Mr. Schmidt, of Zwörsty. She was killed and cast out by the bees two months later. The second occurred in a colony belonging to Mr. Fanghühnel, of Hartingsdorff. She laid a vast number of eggs, in perfectly regular order, in thirteen different colonies in which we successively introduced her, and all of which proved to be lifeless. Eggs from other hives, and even drone eggs, were regularly hatched when inserted in any of the hives containing this queen. By repeatedly inserting brood combs containing eggs from other queens the population was kept up in the colonies with this defective queen."

As this case shows evidently, the cause of the premature death of the embryo germs must be sought for in the eggs, or rather in the mother which produces those eggs. But whether it will ever happen that the cause shall be discovered, is extremely doubtful. We know of analogous cases in human subjects, though not even plausible explanations of the occurrence have yet been furnished; and queen bees producing so-called addle eggs may be classed in the same category. Eggs truly addle—that is, eggs containing no embryonal germ susceptible of development, have not yet been found among those laid by queen bees.

LEUCKART.

[For the American Bee Journal.]

Rearing Artificial Queens, and their Value.

When I commenced Italianizing my bees, I laid down certain rules under which I would proceed the following spring. One of these was, to raise drones and queens so early in the season that the young queens would have no chance to mate with black drones. To get drones early, I wintered in nuclei and full hives, twelve virgin queens. All of these were got through the winter safely, but I lost seven of them the first few days after wintering out. From the five which were saved I succeeded in raising, at the lowest estimate, three thousand drones, that were flying as early as the 20th of April. I had succeeded also in raising more than a dozen queens hatched between the 10th and 15th of April. Every day that was warm enough for bees to fly, the queens as well as the drones appeared to be just as lively and active in their excursions, as in summer weather; and I, of course, expected that the queens would speedily become fertile. But I was doomed to disappointment. None of those queens became fertile until the 7th of May, when three of them commenced laying drone eggs, and soon appeared to be regularly fertile. At that time, however, drones had made their appearance from common stocks also.

Most of the queens that I reared so early, were small, did not prove to be very prolific, and were superseded the same season by the workers. When the queen cells in which they were hatched were built, no young workers had yet been hatched, to my knowledge; and bees could not yet gather pollen in the fields. I tried once or twice more to raise early queens, but always with poor success. I am now fully satisfied that, to raise prolific and large queens, a colony must have a large number of young workers, and must be supplied with plenty of honey and *fresh* pollen newly gathered in the fields. The colony must also be closely watched; all queen cells sealed before the third day after making the colony queenless, and all cells built after the seventh day, should be destroyed. If sealed too early, the young queens hatched from them will nearly always be small; if too late, such queens proved to be very unprolific with me, and were sometimes superseded very shortly after becoming fertile.

In my location it is early enough to commence breeding queens between the first and the fifth of May. During the months of May, June, July and August, good queens can be artificially raised, if the proper stocks are selected, well treated, and properly watched. No stock should be compelled to raise two sets of queen cells in succession. I always found the second lot inferior to the first; and as bees nurse a smaller number of royal grubs better than a larger one, they should not be allowed to build more than eight or ten cells. Queens reared at a time when little or no pollen is gathered, are usually smaller and less prolific than those reared with plenty of pasturage. Therefore, queens reared in the month of September are not near so valuable as queens reared in the preceding month. Queens

artificially reared are, in most instances, as good as natural ones; but not all of them. I will not deny that I think more highly of natural queens than of artificial ones; but we cannot always get them, when we want them, and many a stock would be lost if we depended exclusively on a supply of natural queens. Those queens, too, greatly vary in prolificness and longevity; and I must concede that I have, and have had, many an artificial queen that I preferred to natural ones.

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I had written the foregoing article about ten days before the arrival of the last (December) number of the Journal, thinking it would be in time yet after receiving that number, I retained it; and I am now really glad that I did so, as this gives me a chance to comply with the request of Novice and say how I get my queen cells. But to satisfy Novice and other readers of the Journal that I have been breeding my queens in the same way for a number of years, I send you, Mr. Editor, one of my circulars for 1868, with the request to insert here what I said in it about queen raising:

RAISING QUEENS.

When I first commenced raising queens, I raised them on pieces of brood comb with eggs and little worms, which I had inserted into a little hive (nucleus) with three small frames 6 inches wide and 5 deep that were filled with comb and honey and a small lot of worker bees. This I found was a poor way. I now deprive a good colony of bees of their queen, let them build queen cells, and on the 9th and 10th day I cut out all of them but one and divide and insert into as many nuclei as I have queen cells, and then I either take bees enough from the hive I cut out the queen cells to start the nuclei, or take mostly young bees from another colony and keep them shut up until the young queen hatches, and then open them in the evening a little while before sun down, when scarcely ever any bees will return to the parent hive. In this part of the country it is useless to commence raising queens before the 1st of May. Scarcely ever any queens will get fertile before the middle of May. If they are fertile they may be introduced into large colonies.

To this I have to add that, during swarming time, I stock all my nuclei with queen cells built in hives that swarmed naturally; and that, in nearly every instance, I take the tested queens sent off, from full colonies that have natural queens. The twenty-five queens sent to Novice September 15th and 22d, 1870, were artificial *untested* queens that had just commenced laying and were not more than fourteen days old. They were, consequently bred at the end of August or beginning of September, or at a time when the best breeding season was over, and they could mate only with old drones artificially produced. If only three out of those twenty-five queens ceased laying before they became one year old, Novice had better luck with them than I expected. He might have had the very best of artificial or natural queens, and not fared better. It is my opinion that Novice and many other beekeepers should not delay ordering queens to a time when the best queens cannot be raised. Whether he will do better by ordering queens of Mr. Langstroth or not, if he should order twenty-five *untested* queens so late as September 12th, I am unable to say; and I will not even report my own experience for fear that I might prejudice anybody against Mr. Langstroth.

If several of Novice's dark hybrid queens were more prolific than the pure ones obtained from me in the extra good season of 1870, it is not yet proved that they would have been the same in the poorer season of 1871. But I will concede that they were, and if so, he only experienced what numerous other correspondents of the Journal reported. I cannot think that Novice wrote his remarks about the twenty-five queens obtained from me, in a fault-finding spirit, as I have received a number of letters this summer, stating that the writers ordered queens from me, because Mr. Root recommended me to them. Only for fear that some of the readers might get a wrong impression have I written this explanation. I will only add that among the forty-three queens imported direct from Italy by myself, and successfully introduced in my own stock, were a small number that were very little prolific; and that all of them, save one, died in their second or third year, and that one only lived until this summer—having been only a very moderate layer for the first two summers.

A. GRIMM.

Jefferson, Wis., 1871.

[For the American Bee Journal.]

Queen Mothers and Improvement of Stock.

DEAR JOURNAL:—Much is said among beekeepers about queen fertilization in confinement, about providing pasturage, and about the relative merits of Italian and black bees, &c.;—all looking, we take it, to the increase of the honey crop, while comparatively little is said upon the topic which heads this article.

The fertilization of queens by selected drones, seems at best to make *very slow progress;* while some are ready to pronounce it a miserable failure. However desirable it might be, if practicable, we consider the wise selection of queen mothers, as of far greater importance. Any tyro can constrain bees to rear queens, but not *every* "Novice" can tell whether such queens possess real value, or not. Possibly every apiarian of experience has observed that there is a vast difference in the yield of different colonies in the same apiary, under the same conditions of management, pasturage, age of queens, form of hive, and strength of colony. Another fact, too plain to escape the notice of the observing beemaster, that, in wintering, some colonies consume twice the amount of stores that other colonies of the same working force do, whether wintered in special depositories or on their summer stands. Hence we conclude there is a difference in different colonies of the same variety of the hive bee. There are desirable or objectionable qualities observable in every colony. It should be the aim of the breeders

to breed for the desirable and to breed *out* the objectionable features of his stocks. When this is done the "coming bee" will be one of large producing qualities, beautiful in appearance, amiable in disposition, not a large eater, nor yet an enormous breeder. The large eaters are not the large producers, neither do I find the slightest relation between irritability and industry; often the crossest colony being the poorest workers. This is equally true, whether among blacks or Italians. In my earlier experience in breeding the Italian bee, I supposed that the queen that was large, yellow, and very prolific, possessed all the requisite qualities for a suitable queen mother, provided of course that she was considered pure Italian and her royal daughters were duplicates of herself. But I found by selecting queens of great fertility, I could produce a race of bees that would increase almost beyond limit, giving more of their labor to the rearing of brood, than the amassing of stores, and very much disposed to swarm, issuing in times of scarcity of honey, being *crowded* out by superabundance of numbers. I account for this from the fact that it is the prevailing instinct of the bee to rear brood and amass stores. With some the former, while with others the latter trait prevails. Under box, log, or straw hive management of the black bee for ages past, the inclination to run to excessive brooding was no doubt kept in check by occasional poor honey seasons, when such colonies would perish of starvation. By our present system of management, with movable comb-hives, and breeding rather for increase of stocks than surplus honey, we do not get the most productive bees. When urging the matter of improvement of bees, I am met with this *clincher*—"bees are *bees*, creatures governed by instinct, and that instinct unchanged from what it was thousands of years ago." But, my dear sir, does your horse, your cow, your pigs, or your poultry, possess a faculty, higher than instinct? Yet who will say no improvement has been effected in those domestic animals, in the past twenty-five years." What dairyman would think of stocking his farm with those long-legged, slim-bodied kine that could trot a mile inside of three minutes? Or what pork-raiser would think of fattening a drove of those four-legged land sharks with protruding tusks, such as our fathers made bacon and sausage of thirty or forty years ago? (Unless he possessed the feeding apparatus figured so minutely in the April number of the AMERICAN BEE JOURNAL last spring!) No farm stock at present is more susceptible of improvement, or would yield more readily to the skilful hand, than the honey bee. So fully am I convinced of the vast field of improvement open to the apiarian of the present day, in the wise selection of queen mothers, that I will venture the opinion that the yield of honey might be at least doubled from the same number of colonies, and that too without increase of bee pasturage.

In any apiary of a hundred colonies, some stocks will be found much superior to others. Let us step into such an apiary and select a few queen mothers. They must be from stocks that have come through the previous winter with abundant stores, showing the workers not to be enormous eaters. The queens must not be less than one year old; still better if they be two or three years old, showing longevity, and no attempt ever made by the progeny of either to supersede her. I do not fancy the superseding breed, unless it be at a time when there is a manifest reason for such a procedure—as, for instance, the queen is approaching the sunset of a well-spent life. The workers must be beauties; less matter about the queen herself, on that point. "Handsome is that handsome does." The workers must be industrious; not loitering at home, when honey awaits them in field or forest; yet sufficiently cautious not to sally forth in unpropitious weather, to return no more. They must be amiable in disposition, when out of the hive, not volunteering an attack on the apiarian, his family, or visitors, when passing near the hive. They must be reasonably good wax-workers, and yet not disposed to run too much to fat. I have observed both of these extremes, at times too when such results could not be attributed to the *age* of the workers.

Beekeepers have been wont to ascribe the difference in the product of different colonies to the nature of the combs, some having too much drone comb; others, to the hive, it "had no moth trap." "Use *my* hive, and your swarms will be all productive!" I do not ignore the fact that there is often too much drone comb; nor that some hives are *better* than others. Yet these reasons do not give a satisfactory solution of the question. I present the subject of the improvement of our bees by the judicious selection of queen mothers, in view of the almost total failure of fertilization in confinement; and if we breed only from such queen mothers as I have indicated, a few years will rid us of all objectionable drones. It is a matter too of practical importance—just important to the extent that it does matter whether we get fifty dollars or fifty cents, each, as the profit of our colonies. In the laudable effort of our best apiarians to supplant the black bee by a superior kind throughout all this sunlit land of ours, it is not strange that breeding for superior excellence in that superior variety, should for a time be lost sight of, or receive inadequate attention, so long as the supposed standard of purity was maintained.

I believe a majority of breeders of queens have not only done the best they could under the circumstances, but have done *nobly*. They have planted largely, but the pruning time is at hand. Let unprofitable queens be gently prepared for decent burial, as soon as better ones are ready to take their places. Let our motto bee *improvement*, onward and still onward; if we would reap the best results in the fascinating pursuit of bee-culture.

In conclusion, Mr. Editor, allow me to express the hope that friend Gallup may be able to see the "*reason* why" not all queens of equal purity are suitable queen mothers; and that to maintain the Italian as a "fixed race" is not alone sufficient for our purpose.

W. J. DAVIS.

Youngsville, Pa., Dec. 1871.

[For the American Bee Journal.]

Light Wanted.

MR. EDITOR.—I wish, by your permission, to put another question through the Journal, for solution. It is this—Can a pure Italian queen, whose progeny for the first few weeks all show the *three yellow bands distinct*—thus being purely tested, sent off, and introduced into another colony—afterwards produce workers, half black bees, and the rest having only one and two bands? Or, in plainer words, can a pure queen, tested pure, afterwards produce hybrids? If any of your readers know of such cases, will they please communicate them to the Journal?

On July 11th, I shipped *three tested* queens, to a gentleman out west. July 13th, he writes "queens arrived safe, caged and put in the hives to remain forty-eight hours." The next letter was to this effect—one queen died in the cage; the other two are at liberty.

August 14th, he writes—"one of them shows fine workers in their daily play; but the other does not yet give very pretty workers, being too dark colored." Again, August 18th, he writes—"I have just opened the hive in which the queen is, that produces the dark colored workers, and find she is giving about three-fourths black bees, and the other fourth one and two banded hybrids. It is now one month and six days since I set her at liberty in the hive"

Now upon the receipt of the letter of the 14th, I know that there had not appeared a hybrid bee in either of the stands, for I had been daily among the hives, But, to be sure of no mistake, I went to my books to see if I was not right in the number of the hives, 36, 64, 68, from which I had taken the queens. I then opened each hive, examined carefully, and could not find a two banded bee in either of them, much less a black bee. I then, August 22d, wrote to him that he must be mistaken in having the same queen he got of me.

He answered on the 26th, "I know she was not killed in the first fifteen days after she was put into the stock, as she was there to be seen, and no queen cells were made in that time. Hence she could not be superseded by a black queen. If she has since then been superseded, it has been by a queen raised from her own brood and mated with a black drone. Now in the first fifteen days of her existence in the hive, I opened it as many as three times, and found the facts as stated above." Again, August 28th, he writes, "Since writing you on Saturday, I have again examined that stock of bees, and begin to find an occasional three-banded bee. If she left good stock with you, it will certainly appear here, if she was perfectly fertilized."

On the receipt of this last letter, I again carefully examined the three hives mentioned above, with the same result as before—not an impure marked worker in either of them. I felt satisfied I had sent him *purely* tested queens; but as he was not satisfied, as was clear from his letters, I sent him another queen, September 12th.

Now, to this day, there has not appeared a hybrid bee in either of the above stands. Hence one of two things must be true. Either the queen got of me was superseded, or if she was not, she produced hybrid workers after being removed from her stand here—a case I do not recollect ever hearing of. Some may try to explain this case, by saying the queen met another drone, after being removed. I do not believe a queen is ever impregnated but *once and for life*.

The above case is a strange one to me, for if true that a queen, after producing purely marked workers for the first few weeks, can afterwards produce hybrids, then how can any breeder be certain that the queen he is sending off is pure? I was as certain of the purity of these queens when I shipped them, as I ever was of any queen; and after I had shipped them off, had I discovered within three weeks a single black bee with a two banded bee in either of the stands I took the queens from, I would have been satisfied that I had sent a bad queen. But as no such sign was discovered and has not been even to the present time, I can give no other explanation; but leave this for your readers, who may know of such cases, to explain.

R. M. ARGO.

Lowell, Ky., Nov. 22, 1871.

[For the American Bee Journal.]

Cross-Bred Bees.

In the October number of the American Bee Journal, there is an article under the caption of "*The Coming Bee*," upon which I wish to offer a few thoughts. I do so the more freely, because the writer requests any one who may have had experience with the kind of bees he describes, to report. I do not know what special qualities he may have found in bees less than half Italian; but my observation of that kind of bees, has given me a very poor opinion of them.

I have a number of colonies, the progeny of pure Italian queens fertilized by black drones. These I have found to be but little more inclined to sting than pure Italians. One of them, in fact, is as good natured as any bee I ever saw. They rarely if ever attack any one, when the hive is not disturbed; and I have extracted the honey from their combs, and have opened the hive many times for other purposes, without their manifesting anger. Other colonies of half-bloods are a little more belligerent than this one, but none of them are as much so as black bees generally are. I am aware that half-bloods have a bad reputation for ill nature, but as far as my observation extends they do not deserve it.

I *had* a colony whose mother I thought was pure, and they were terribly cross. It was nearly impossible to smoke them into submission. They would obstinately refuse to fill themselves with honey, and as soon as the hive was opened, they were ready for battle. But on close inspection of the progeny of the mother of this queen, there was found to be in them a dash of black blood. So these very cross bees were less than half Italian. I have had other colonies less than half Italian, and have found them to be

invariably more belligerent than the first cross; and I have failed to perceive in them any superior qualities which the pure Italians do not possess in larger measure.

I have some curiosity to know how Mr. Wright has ascertained that his mongrel race are greatly superior to the pure Italians in their range of flight and acuteness of scent! I have several colonies now, a majority of which are somewhat less than half Italian. They have received pure Italian queens this fall, and within a few days the pure Italians in those hives have been bringing in loads of pollen, procured somewhere, I know not where nor from what, while only now and then does one of the mongrels bring in anything; and yet the latter outnumber the former perhaps five to one. This fact (and it has been ascertained by careful observation), would seem to place the pure Italians ahead in acuteness of scent or range of flight, or in something equally important. If Mr. Wright, by some lucky accident, has hit upon a cross which possesses superior qualities, which qualities can be perpetuated, I shall be glad to know and acknowledge it; and will be glad to procure a queen of him. But I apprehend that he will find that he has been hasty in his conclusions. It may be well for him to continue his experiment in that direction, and report results of more extended observation.

M. MAHIN.

New Castle, Ind., Nov. 2, 1871.

[For the American Bee Journal.]

Introducing Queens.

Since I commenced to raise queens I have tested many methods for introducing them to full colonies. Last season I introduced a good many queens successfully in every case, in a simple and easy way; and I have no doubt others can do it equally well. My new method is this: Remove the queen from the hive to be re-queened (and it matters not what kind of hive the bees are in—whether with frames, or without frames). Three days later, fumigate all the bees with tobacco smoke, or wet them down with sweetened water, scented with essence of peppermint. Then introduce the queen at once, and she will be kindly received. Remember, the time for leaving the hive queenless is *three days*, and *not* longer, while the hive contains brood. As soon as the queen is introduced the bees will cease to work upon the queen cells, and none of them will be capped over. In a few hours after the queen is introduced, eggs can be found in the cells.

I introduced a few queens last season, without first removing the queen from the hive to be requeened. I cannot recommend it as a safe way in all cases; but perhaps by giving this method a trial, a way for introducing queens safely, without first removing the queens, may be discovered. The theory is this: most beekeepers know that when a queen has been caged or removed from her colony three or four days, that she is then not more than half as large as she is when in a full stock, laying two thousand eggs a day. Well, we should say that she is in good fighting trim, or much more so than a queen that *is* in a full stock, and laying her two thousand eggs per day, with her abdomen full of eggs, &c. Now, if we can introduce a strange queen (one that has not been in a full colony for three or four days) by cheating the bees, so that they will not know one queen from another, as I do when I introduce with tobacco smoke, we shall have two queens in one hive, and if they happen to meet in "mortal combat" in the course of a few hours after the queen is introduced, it will be seen at once that the strange queen has the advantage over her antagonist (the old queen), as her condition is much the best for fighting, she not being burdened with thousands of eggs.

I was successful in three cases. In the fourth case the bees kept the two queens for ten days, and the one introduced was missing one day when I looked to see how they were getting along together. The queens introduced had their wings clipped, and thus I could distinguish one from the other. I hope some of your readers will more fully test this plan next season. My plan for introducing with tobacco smoke was given in the Journal for July last.

It seems Alley is not the only man who makes a "smoke house" of his beehives and "vomits his bees to death" (See *Amer. Bee Journal* for November, page 98). I wondered why it was that your correspondents so misconstrued what I said about giving bees tobacco smoke. One of them recommended giving bees chloroform instead of tobacco smoke. Well, I am of the opinion that not many readers of the Journal took much stock in the chloroform concern. I have used tobacco smoke for twelve years in handling bees, and never saw any ill effects resulting from it yet.

I still have another way of introducing queens. It is not original with me. I got it from Mr. George S. Wheeler, of New Ipswich, N. H. Mr. W. removes the queen, and then crushes her, and daubs the queen to be introduced with the dead body of the one removed. He says he has been successful in every case. I tried it on one queen, and did not succeed. I found the bees going through the hugging process, and so removed the queen, and introduced her successfully three days later.

Many beekeepers have an idea that queens can be introduced only during warm weather. This is not the case. I introduced them late in October, and have introduced one since November came in.

H. ALLEY.

Wenham, Nov. 8, 1871.

[For the American Bee Journal.]

Eggs laid in Queen Cells by the Queens.

MR. EDITOR:—I see on page 139, December number of the Journal, a circumstance related by Mr. Grimm, of his seeing a queen withdrawing her abdomen from a queen cell and finding an egg in it; and also some editorial remarks in regard to the shape of the cell, &c

Now, I will relate to you and the readers of the Journal what came under my personal observation lately: Some time about the 10th of June I and my assistant, Mr. Meldrem, were looking over a hive of Italian bees, to see what condition they were in, as I wished to raise young queens from the mother of the colony, a very beautiful queen. We came to the comb she was on, and there were a number of queen cells on it. They had smooth, thin walls, and were in the condition they usually were when I found eggs in them. I told my assistant, who was then rather new at the business, that, judging from their appearance, the queen would lay in them in a day or so. Each one of them (six in number) was carefully inspected, and there was no egg to be seen in any. We watched the queen depositing eggs in worker cells, close by the queen cells. She laid quite a number, and then I turned the comb, so as to view the workers on the other side as to their markings, while my assistant still kept watching the queen. Presently he said, "Hold still, the queen has inserted her abdomen in a queen cell, and is laying in it." I did not turn the comb, for fear of disturbing her. Soon he said she had come out, and he pointed to the cell she had left. She was then close to the side of it, and there was an egg in it. I know my assistant to be a man of truth, and furthermore know there was no egg in any of the cells five minutes before. The cell she had laid in was about the usual length of queen cells after they are sealed over, and the diameter of the mouth was larger than that of a drone cell. I could see no difference between that and the other five without eggs. I thought at the time, where does the compression theory come in? I kept watch of the cell, and it was sealed over in due time after the larva had hatched, and the young queen is now in my yard, a very prolific one. The old one I let a friend have, after a good deal of persuasion, as he had accommodated me many times. Now, the compression theory may be correct, yet I have seen queens so often laying in worker and in drone cells not over one-eighth of an inch in depth, that I am inclined to doubt it. I cannot see either why a queen should be misled to lay in a queen cell, as swarming is the way ordained by the Creator of all things for bees to "multiply and replenish the earth." As the old queen leaves with the first swarm, it seems necessary that some way should be left for the remaining bees to secure another royal mother. Neither does it necessitate that the young queen should be a "rival or natural enemy," for in all cases that have come under my notice when, from scarcity of forage or other causes, swarming was postponed, the workers tore open the cells and destroyed the young queens. Only in cases of supersedure are the young queens allowed to hatch, and then frequently the young and the old queen remain peaceably in the hive, and even on the same comb, until death by old age takes away the mother.

G. M. DOOLITTLE.

Borodino, N. Y., Dec. 5, 1871.

☞ According to the foregoing, and the previous communication of Mr. Grimm, given in our last number, we may assume that queens do, at least occasionally, lay eggs in royal cells. But then comes up the question, if those eggs are suffered to remain there till hatched and the larvæ be then nursed to maturity, what will the product be—queens, or drones? Is it certain, also, that eggs laid in such cells by queens, or the larvæ springing therefrom, will be suffered to remain there and mature, after the workers discover their true character? Leaving out of view altogether, for the present, the queen's ability or inability to impregnate the egg deposited by her in a queen cell, may we not inquire whether she has the physical ability to place and attach an egg properly in such a cell? And may not instinct impel the workers to discard and throw out of them all eggs not found properly placed and attached, replacing them by others of their own choice and selection? Let the bearing on some of these points, of the facts stated in the ensuing article by Mr. Hewitt, be duly considered, before hasty conclusions are drawn *pro* or *con*. In the case there related, the workers were the agents, both in inserting the eggs in and in removing them from the queen cells, as circumstances existing at the time required or prompted them to do. And as, in each of those instances, they evidently proceeded in accordance with what, humanly speaking, we might call the dictates of sound judgment, may we not ascribe to them, in other instances also, impulses prompting them intuitively or instinctively to the course which the law of their existence demands and prescribes?

Furthermore, queens undoubtedly lay eggs in very shallow cells. But has it occurred to the observer to inquire what, if allowed to remain there and the larvæ hatched therefrom be nursed to maturity, such eggs will produce? When laid in rudimental, shallow cells, are they not usually discarded and thrown out by the workers, if this do not happen at a time when they are naturally predisposed to tolerate and cherish drone brood? And if the eggs so laid chance to be retained, and are properly brooded and the larvæ nursed to maturity, will the product be workers or drones? We know of only a single occurrence in point; but the issue there may indicate what is ordinarily to be looked for as the result of such contingencies. A few years ago a bee-keeping friend set a top box having glass ends on the hive of one of his most populous colonies, whose queen was remarkably prolific. Within the box were fastened strips of new worker comb, to allure and guide the bees, which at once took possession and went to work, sedulously building worker cells and storing honey in them nearly as rapidly as they were built—many of them being then less than half finished. When these combs were extended nearly to the bottom of the box, the queen happened to find her way into this upper story, and laid eggs in such of the rudimental shallow cells near the apex of each comb as still contained no honey. Then finding no further call or room for her services in that quarter, she withdrew and recommenced oviposition in the main hive below. Observing the eggs in the shallow cells our friend's curiosity was excited, and he closely

watched the ulterior proceedings and awaited the issue. The workers did not remove or cast out those eggs (this was in the month of June), but brooded them till hatched and nursed the larvæ, extending and slightly widening the side walls of the cells, in due time sealing them with *convex* caps; and finally there issued from them several dozen of *small drones*—such as are usually bred in *humped* worker cells—as the result of that demonstration. Hence, reasoning from analogy, while conceding that queens do not unfrequently lay eggs in royal cells, may we not claim—till direct, conclusive evidence to the contrary is furnished—that those eggs are either discarded and cast out and replaced by others, under the auspices of the workers; or if, in rare cases, hatched and nursed, produce *drones*—usually *still-born*, or prematurely perishing in the cell. —ED.

[For the American Bee Journal.]

Eggs in Queen Cells.

MR. EDITOR:—Having read in the December number of the American Bee Journal an article from the pen of Adam Grimm, and your comments on the same, in regard to the depositing of the egg in the queen cell, I have concluded to relate a case that came under my notice in the summer of 1860. One day during the swarming season several swarms came off in quick succession. One alighted on the body of a dead plum tree, and being hurried, I was somewhat rough with them, and suppose I injured the queen, but I got it into the hive and carried it to a stand. Immediately afterward another swarm was hived, and placed near the one spoken of, after which but little notice was taken of them till the eleventh day. On that morning I found that the bees after building some combs in the first hive had nearly all deserted it, and found the queen lying dead on the ground in front. The deserters had joined the other swarm, and after filling the hive with comb and brood the bees had passed through a crevice in the honey board and were building in the upper chamber, from which I immediately removed them and put on boxes. In the afternoon of the same day this colony swarmed. Nearly all the bees left with the swarm, and flew directly to a tree in the woods. After returning from following the runaways, I opened the hive, and on the edge of one of the combs I found a cluster of four queen cells. I examined them carefully. There was no egg in either of them. The next morning I opened the hive again, and there was an egg in each of the four cells. About the middle of the day, as there were so few bees in the hive, I added to it a very small swarm having a queen. I looked again in the evening, and the four cells were again empty. This is conclusive evidence to me that, in this case, the eggs were placed in the cells after the queen left the hive, although they (the cells) were built while she was in it. Now, if in some cases the workers transfer the eggs to the queen cells, is it not more than probable that they do it in all cases, whether the queen is present or not?

Previous to this occurrence I had read Langstroth's work, in which your theory in regard to the impregnation of the egg is given, but was not able to account for the sex of the queen, if the egg in the queen cell is deposited there by the queen mother. Since then I have no hesitation in endorsing your theory in regard to pressure producing impregnation.

I have owned and handled bees for more than twenty years; have used the movable comb hive since 1858, and have been a reader of the Journal for the last six months.

MILTON HEWITT.

Perryopolis, Ohio, Dec. 12, 1871.

☞ The foregoing communication may serve to throw light on an interesting problem in bee-culture. The facts stated have not, we believe, been remarked before by any observer, and attention being now drawn to the matter, we trust it will next season be made a subject of careful investigation. The insertion and subsequent removal of the eggs is of itself a curious circumstance, and is probably significant. Future observations may enable us to trace its bearing on the production of queens. Observers, however, should constantly bear in mind that the object of inquiry is not to sustain or confute theory, but to elicit and establish truth.—[ED.

[For the American Bee Journal.]

Italian Bees Not Working in Boxes!

In the second line of the second column, page 102 of the Journal for November, 1871, we find the above remark, reported as made by Mr. Marvin, of St. Charles, a prominent apiarian who keeps Italian bees, and, so far as I know, keeps them exclusively. Similar remarks we find on page 109.

As box honey is most convenient for transportation to market, and fetches nearly double the price that extracted honey does, this would really be a grave charge, if it had any foundation. When I stopped selling in the spring, this year, I had only two hundred and ninety (290) colonies of bees left. Eighteen of these were queenless or had drone layer queens, and five of them became so weak that I united them with other weak stocks. A number of strong stocks were weakened in May and June, by taking bees from them to start over one hundred nuclei. These two hundred and sixty-seven (267) colonies increased to six hundred and forty-four (644), and gave nine thousand nine hundred and forty-six (9,946) pounds of box honey. At the end of July we had estimated it as amounting to twelve thousand (12,000) pounds; but, owing to the great drouth, the bees replenished their stores in the main chamber from the contents of the boxes. This yield would no doubt have been increased by four thousand (4,000) pounds more, if we had not used the extractor, and five hundred (500) pounds besides from hives that had been weakened in starting the nuclei—increasing the average yield to fifty-four (54) pounds per

hive. I do not think that this looks like failing to work in boxes.

I had stocks that gave two sets full of box honey, equal to sixty-six (66) pounds, and a swarm besides. The best stock I had gave two swarms artificially made, and, with these swarms, one hundred and forty-six (146) pounds of box honey. I used fifteen frames full of comb to secure that result.

Doubtless those beekeepers who report a failure of Italian bees to work in boxes, have not the genuine Italian bees, such as we get direct from Italy. They have tried only the shining, beautiful, gentle Italian bee that does not sting, and is valued so highly by queen breeders, as it proves most satisfactory to purchasers, who consider it purest because of its beauty. I have repeatedly reported my experience with these bees in the Journal. I found the same fault with them, and will concede that they are not worth keeping, if kept to secure box honey. There seems to be one great fault with them. They cannot or will not produce wax as the black bees, the hybrids, or the *unrefined* Italian bees from Italy. They are usually very weak in the spring, and recover too late to do much. The same observation has been made by other beekeepers. During last summer I received orders for queen bees from two customers that had got queens from me two years ago. Both write that the workers reared from these queens were much crosser and not as fine looking as their other Italian bees, but proved to be very productive. "Send me another queen," says one, "of the same brood. I do not care how cross the bees may be. I want bees for business, and not for show."

I have been experimenting this summer with the *coming bee*, as a correspondent of the Journal names it, and will send a report respecting it in a short time.

A. GRIMM.

Jefferson, Wis., Nov. 1871.

[For the American Bee Journal.]

The Honey Extractor, Side Boxes, &c.

MR. EDITOR:—I see in your valuable Journal that some prefer the use of the honey extractor, to the entire exclusion of boxes. Others prefer boxes entirely, and will not allow even a place for the Extractor. Now, I take the ground that both are advantageous. I have one of J. L. Peabody's machines, which works to perfection. The machine is easily cleaned, and will last a lifetime.

I am frequently asked what proportion of the honey I can get from the comb. I would say, without fear of contradiction, that I can take ninety-five per cent. of old or ninety-eight per cent. of new honey from the combs, without injuring them in the least, and that with less labor than would be required to take the same amount in boxes. The honey when taken as it is gathered seems quite thin, and looks as though it might sour; but it gradually becomes thick until it has the same consistence as other honey, and as cool weather advances it becomes candied. At least such is my experience. As to obtaining more honey with the Extractor than can be secured in boxes, I will give an instance to prove that such is the case. Quite late in the season (about the time basswood commenced to bloom) I made two artificial swarms, as near alike as possible: one black, the other Italian. On the black swarm I placed boxes, and used the Extractor with the Italians. Now for the result. I took from the black swarms (they filling their hive with comb and honey sufficient to winter) twenty-four pounds of box honey. The Italians have comb and honey the same as the others, and I have taken one hundred and twenty-four pounds of honey, making a difference of one hundred pounds in favor of the Extractor. Now, if we allow one half for the superiority of the Italians over the common bee, we still have fifty pounds, or twice the amount stored in boxes, in favor of the honey extractor. I admit that with us the extracted honey is not so salable as box honey, and therefore I prefer to produce both. H. Alley and some others recommend using boxes on the sides of the hive, and say these are a success; but with us, this season, they have proved otherwise. From the 25th of June to the 25th of July, the weather was quite cool, and within that time we had most of our surplus honey stored. The nights were very cool, and every morning the boxes placed at the sides of the hive would be found almost or entirely deserted, while those on the top would be well filled with bees. The consequence was that I obtained double the quantity of honey from the top boxes that I did from those placed on the sides. There was no difference in the size of the swarms that I could perceive. Had the weather been very warm, I presume the difference would not have been so great. Boxes holding about six pounds are those in general use here; yet they do not sell for as high a price as smaller ones holding two or three pounds, with but a single comb in each box; there is an objection to these small boxes, because the bees cannot keep up the requisite warmth in them, or work to so good advantage, unless they are constructed on the plan of those of Mr. Geo. T. Wheeler, of Mexico, N. Y. He has the boxes so arranged as to secure the required amount of animal heat, and still have each comb built true and even in each small box when separated. The glass, if any is used, is put on after the box is filled. There is also another advantage about these boxes, that is, the bees always finish the combs in the center of a large box first. All that you have to do is, to open the case of boxes, and so soon as any are full take them out and place empty ones in their stead. This stimulates the bees to greater activity, and overcomes the difficulty so often experienced of getting bees to work in a second set of boxes.

I am highly pleased with the American Bee Journal, and do not see how any beekeeper can do without it, even if not keeping more than two or three stocks of bees. Would it could come twice as often. Wishing you and the Journal much success, I remain yours,

G. M. DOOLITTLE.

Borodino, N. Y., Nov., 1871.

[For the American Bee Journal.]

Comb Honey, or Extracted?

MR. EDITOR:—As we are on our way home from the convention at Cleveland, and have to undergo the painful ordeal of "laying over" to-day at Louisville, Ky., we thought we could not spend the time more pleasantly in any way than in writing to the Journal. We attended the convention mainly to satisfy ourself by consultation with honey raisers from different sections of the country as to the comparative profitableness of raising box or extracted honey. Or, rather, we wanted to learn more particularly whether we could in the future stand a reasonable chance of selling, at a fair price, all the extracted honey we could raise—say at one-half the price that comb honey commands.

If the convention had satisfied us fully on this point, we, for one, should have imbibed our full share of the motto: "Be happy," that was displayed so conspicuously on the wall in the rear of our venerable and pleasant looking president.

We went to the convention strongly prejudiced in favor of running our apiary for extracted honey alone, as we have it arranged now for that kind of management; and as we commenced this year with only eight double hives and seventeen single ones, and increased the stock to thirty-six two-story and sixteen single ones, and obtained nearly two tons of extracted honey, we felt certain that in another year, we could increase the stock to one hundred colonies, and obtain ten thousand (10,000) pounds of honey. This, even at ten cents per pound, would pay handsomely. But where could we find a market for all this in bulk? And as there are hundreds of beekeepers who could, and perhaps will do the same thing, is there not danger of the business being overdone?

We all know that the fruit business has been overdone, and the days for fancy prices are gone. That business certainly offered no more inducements than the production of extracted honey does now, even at ten cents per pound. The fraud of adulteration could be lived down, if there were any reasonable prospect that the demand for extracted honey would nearly keep pace with the production. Another trouble is, that the low grades of West India honey must always come in competition with it.

It is generally admitted that we must build up a market for extracted honey; and as it is a maxim among fruit men, that "he that introduces a new fruit, must be its own buyer," we are a little afraid this might apply also to extracted honey. Above all things in the world, we dislike to have anything to sell which nobody wants to buy. We find that there is already a good market for comb honey almost anywhere, and in many cities, there is not half a supply. On our way to the convention and back, we talked with grocery men in Nashville, Louisville, Indianapolis, Cincinnati, &c., and find that they are all anxious for consignments of box honey, saying that they can get from twenty-five to thirty-five cents per pound for it. It sells very readily, and they say they never had so large a supply but they could sell it all in a few days. But none of them wants to sell extracted honey. The complaint is that it goes slow; that their customers are afraid of it; that there has been so much adulteration, that most buyers of honey, who are not judges, prefer to buy and pay more for comb honey, for fear of being imposed upon. That many of their customers, when wanting a simple sweet, will generally buy molasses or syrup, because it is cheaper; while the wealthy classes, who wish it principally for show on the table, want nice white comb honey. These are about the facts which we have been able to gather from grocery men, and we hope that others, who have had more experience, will tell us if they are correct.

On the other hand, we have an exalted opinion of the speed and power of railroads; but especially is our impression lively as to their *smashing* ability; and in the distant future, we can see visions of smashed-up honey combs, which my little pets and myself have labored so hard all the year to fix up so nicely. And, saddest of all, to receive from our grocery man the discouraging intelligence that "your honey arrived very much broken, and leaking badly; and if we can sell it at all, we shall have to sell it very low."

If we could only sell extracted honey, how simple and nice it would be only to have a good honey extractor and a lot of good iron-bound whisky barrels, and we could ship to the end of the world, and the railroad men might tumble it about to their hearts' content, without damage to it or me.

How shall we send our honey to market? When shall we send it? Where shall we send it? To whom shall we send it? Upon this subject, we feel that our ideas are rather "tangled" up, and, like the drone question, it is as clear as mud to us. Brother and *sister* beekeepers, we want your advice on the *honey* question. The drone question we leave for Dr. Bohrer, and feel that he will be found ready and equal to the occasion, if not *superior* to it.

S. W. COLE.

Andrew Chapel, Tenn.

[For the American Bee Journal.]

How to make Super Hives.

The way commonly recommended by beekeepers, to get up super hives from which to extract honey during a plentiful yield, is as follows: Put a box of the same size as the lower or main box, without bottom or honey-board, after removing the latter from the hive that is calculated to be doubled, on the top of this, and removing a part of the combs from what is now the lower chamber, into the upper story—filling up both sections with empty frames, and putting a honey-board and cover on top of the upper section. By following this advice in former days, I found that it did not work according to my anticipations. It appeared to me as if the large amount of empty room all at once given, discouraged the bees, or so cooled-off their brood-nest, that they were unable to build much

comb, or leave the hive for the collection of honey. The bees built only a small quantity of comb, and at the end of the season had stored less honey than hives which I had only supplied with boxes. I have since adopted different methods of making double hives. One of these is the following: At the time when the honey harvest commences, or about two weeks previous, I select such stocks as I intend to use as double hives. I do not choose the strongest hives with very prolific queens, but such as are only of medium strength, because otherwise the colony might insist upon swarming, and thus spoil the game. For each of the hives selected, I have one of the super hives ready, into which I place all the brood and store-combs but one, of a colony that has already swarmed naturally—after brushing off every bee from those combs into the mother hive, which remains on its old stand, and into which the young swarm returns voluntarily, because the queen either would not fly, or is returned by the apiarian. By doing so, the super hive is at once filled with as many frames as I find it desirable to have in it; the colony gets a large access of workers from the daily hatching brood, and the cells are filled with honey as fast as the brood leaves, if the harvest is good. Only in a few hives the queens will continue to breed in these super hives, by refilling the middle combs with eggs. In little more than a week, the brood from the former queen will be sealed, and the combs can be emptied of honey without fear of throwing out the larva, or breaking the combs, as brood combs and old combs are much stronger than new ones. Of course, the apiarian does not increase his stock any by this method; but he will not fail to get a large amount of extracted honey from the super hive, and in good season, a good yield of box honey from his swarm, that received all the bees of the stock it came from, and one frame with brood besides.

A second method is the following: About a week before the honey harvest commences, I will unite as many hives as have swarmed *only once*, on the same day on which they swarmed, making one of two, treating one as the main hive, and using all the combs of the other to fill up the super hive, with all the bees of both stocks that remained in them after the swarms left. The new or double hive they created, I set on a new stand, giving the young swarms the stands of the old stocks. In this way I get an increase of one stock from two. The young swarms will be strong; supplying box honey in a good season; and the double hive thus formed will in a few days have no unsealed brood in any of the comb, and could all be emptied of honey, if found desirable. But I advise bee-keepers to clear out the super hive only every three days, if full or nearly so. I have not had any double hive that was formed in this manner, give a second swarm, or that had not a large amount of honey stored. In the double hive, there will be a young queen in the fall. If desirable, such a double hive can be separated a little before the end of the honey season, and the queenless part supplied with a fertile queen, if increase of colonies is wanted; otherwise, the combs of the upper story may be emptied and kept for future use, immediately after the main honey season is over, and the bees will store what little honey they still gather, in one hive, which is more desirable than to have it stored in two.

A third way to make double hives, is this: Put on a super hive, and furnish it with empty combs, if you have them. The colony will occupy those combs immediately, if strong enough. I use no honey-board between the hives, and put one or two combs or frames less in the upper story than in the lower, to keep the bees from sealing over the honey as quick as they would do if they had the full number of combs. I have had them lengthen the cells, so that some of the combs contained twice as much honey as they would otherwise do.

I have extracted honey from the main hive repeatedly, but find it much more difficult to remove the bees. There is usually brood in nearly every cell, and this is injured or thrown out, if not very carefully handled. After two years' trial, I recommend getting up double hives for the extractor.

And now, Mr. Editor, I hope that the foregoing will be plain enough to be understood by beginners in the bee business. I am well aware that I write nothing that is new to experienced beekeepers, and would not even have thought to write for beginners, if I had not received many letters of inquiry, that I got tired of answering and explaining separately.

ADAM GRIMM.

Jefferson, Wis., Nov. 25, 1871.

[For the American Bee Journal.]

Bee Hives.

MR. EDITOR:—The above caption is now one of the "vexed question" ranking with that of the "purity of Italian queens." After all that has been written about the hive by the most prominent bee-*men*, I hate to add anything; but as the Journal is open to all, to give their views and experience, I will candidly give mine for what it is worth. Of all the hives I have seen and tried, none have suited me better than the regular Langstroth. But even that does not come up to my view of what a good and useful hive ought to be. In the April number of the Journal, current year, page 240, J. L. Hubbard describes just *the hive we want*. I will give his words:

"We want a hive which can be completely closed and fastened, so that it can be set in a wagon, or sent off by express, safely, whenever it is deemed desirable. It should not take over five minutes to fasten it securely, leaving sufficient ventilation. It should be of such a shape that it will pack to good advantage, for convenience of winter storage and transportation. The frames should remain firm. In hives where the frames are not fixed they will swing easily after being used in the machine. I specify these needs, because it is so often necessary to remove bees, and with many kinds of hives packing is inconvenient, taking up much time; and also because

the subject of moving bees from one location to another, to gather different crops of honey is attracting attention. This branch of business would undoubtedly be carried on quite extensively, if hives were as easily moved as so many boxes of beans. I have never yet practiced this; but want to get my hives in such a shape that I can do it, as I believe in it. Will not those who have done so, give us some ideas of the subject?"

I exactly agree with Mr. Hubbard, in the above description of *the hive we* want, and shall adopt the Triumph Bee Hive by W. R. King, as I think it comes nearer the above description than any I ever saw or heard of, except Adair's sectional hive, which I find too inconvenient to handle. The Triumph has close fitting frames, or *fixed;* can be closed up and fastened in less than five minutes, and has sufficient ventilation for transportation in the hottest weather. It is the best ventilated hive I have ever seen. It is also well adapted for wintering on the summer stand. The close fitting frames literally making one hive in another, which is warm in winter and cool in summer. Also, by means of a partition board, it can be enlarged or contracted at will, and in a few minutes, to suit the size of the swarm; and in the honey-gathering season it can be enlarged, so as for the bees to make all surplus in frames in the body of the hive and on top; and it is well adapted for the extractor. If the apiarian would rather have his honey stored in caps, he can be accommodated with this hive. It is also self-cleansing by means of a moth-trap drawer in the bottom; but that is of minor importance. It can be made without the moth-trap; but I think that by means of the moth-trap drawer, it is the best self-cleaner and ventilator I ever saw. Also the frame of this hive is just the size I want, being 9x12 inside, and is a great advantage to those rearing queens, as three or four of such frames will make a pretty strong queen-raising nucleus, which can be kept strong by exchanging frames with full hives, and so save the trouble of feeding and reinforcing with bees. The frames are so adopted as to secure straight combs. These are only my views, as I have tried only one of them this season, and it has given satisfaction, convincing me of the superior advantages of this hive over many others, I will not say over all others, for I want to try a thing, and in fact always do try a thing, before I give my experience, or what I know of it from experience. I have not given all the advantages of this hive yet; but the length to which I am spinning this out, warns me to stop for the present.

R. M. ARGO.

Lowell, Ky., Nov. 27, 1871.

[For the American Bee Journal.]

Cursory Remarks and Observations.

DEAR EDITOR:—I intend again trying to drop you and the readers of our beloved Journal a few of my thoughts, experiences, &c., in order to give you a better chance to select such articles as may seem best calculated to promote the worthy cause of bee-culture. I think many others of your subscribers who have hitherto contributed nothing in this way would confer a favor on the bee family and often aid the inexperienced if they would take notes of what is daily transpiring in their apiaries, and send them to the editor to give him a larger supply of materials from which to select. Nor should any feel disappointed if his contribution does not appear, but rather be glad that there was in the editor's possession some article better suited for publication, or just then better adapted to the passing season.

The first thing I do when I receive the Journal is to put a few stitches in the back, rip open the edges of the leaves, take a hurried glance over the pages, and if the mill is not running empty, pick out what interests me most. I often have to let it drop, and run to some work, but that evening it gets pretty thoroughly finished, even if it takes till twelve o'clock to finish it. In two days after receiving it I would be ready for the next number.

Well, I see in the August number that Novice has a bran new scale, to test matters closely. I received one also about the same time, but, brother Novice, I would not trade even with you, as you say yours only weighs sixty pounds, and you cannot weigh a Langstroth hive on it. My scale cost fifteen dollars. It is a Fairbank's and Greenleaf double beam platform counter scale, with brass hopper, and will weigh two hundred and eighty-four (284) pounds, and as low as half an ounce. I like it very much, and think it is the very thing for bee keepers. They should each have one. I had a hive of hybrids in a Langstroth on the scale from the 16th of August, with the following result: August 16th, gain ½ lb., 17th, ¾ lb., 18th, 1 lb., 19th, 1½ lbs., 20th, 2½ lbs., 21st, 1¾ lbs., 22d, 2½ lbs., 23d, 2¼ lbs., 24th, 3¼ lbs., 25th, 2 lbs., 26th, 3 lbs., 27th, 4½ lbs., 28th, none, rainy and cold, 29th, lost 1 lb., 30th, gained 1 lb., 31st, 4 lbs., Sept. 1st, 5 lbs., 2d, 5 lbs. The hive was then removed and another put on of black bees, not quite as good results. I did not try my best hive, which would have shown much better results. When I weighed them this fall, I only found out which was my best hive. The above can be considered the product of fall pasturage. Novice's, I judge, was spring honey, as his article had to be in Washington by the 10th of August. My hive was always weighed in the evening. In the morning it always lost from two to three pounds. I cannot see how Novice's gained from six to thirteen ounces so early as from six to seven, seven to eight, and eight to nine o'clock in the morning. Mine only commenced gaining from twelve to six in the afternoon. On September 23d, they were still gathering at the rate of one and a half to two pounds per day. Soon after that frost stopped their operations. My best hive goes into winter quarters with one hundred and seventy-six (176) pounds, hive and all. Take fifty pounds off for hive, leave one hundred and twenty-six (126) pounds. Take off again thirty-five pounds for bees, combs, and winter stores, would leave ninety-one pounds of surplus,

that I could yet extract if I had an extractor. Do you think, brother editor, that thirty-five pounds is enough to allow for bees, combs, and honey for winter, if they are wintered out of doors?*

My present stock consists of twenty-five colonies in Gallup-Langstroth hives. I place them with their backs together, stuffing hay between them and around the hive, with the exception of the front. The north and west sides are boarded up and covered, leaving the east and south side open. Last winter I had them in my cellar, which is very dry, with not quite as good results as I should have liked to see. How the present plan will do, I may let you know, if we live next spring—as wintering bees is one of our greatest difficulties; that is wintering them successfully.

I suppose my subscription will soon run out, but send the Journal right along, and your money will soon follow.

I have some lumber ready for Gallup hives, as quick as we get that "hash," if it pleases me.

My article is getting long, so I will close, wishing success to you and the Journal, and subscribing myself as before.

A MILLER, *by profession,*
but not a MOTH MILLER.

* The quantity of stores required depends much on the mode of wintering adopted, the kind of hive used, and the character and deviation of the winter. Mr. Bickford's method is inexpensive, easily managed, and if carefully executed with a stock having a due proportion of young bees and a healthy fertile queen, is invariably successful.—[ED.

[For the American Bee Journal,]

Useful Suggestions.

MR. EDITOR:—Many of our experienced apiarians, who write very interesting articles for the Journal, are not explicit enough in describing the smaller details of any process or article described.

First.—For instance all of our eminent bee-keepers agree that feeding in the spring promotes early breeding and a consequent great yield of honey, if nature does her part. Various styles of feeders are described, and recipes for making stimulation bee-feed, and just when and how to introduce it to the bees. But in no instance, as I have thus far seen, do they tell us *how much* to feed at a time. If a beginner is to buy sugar for spring feeding by what method can he estimate the amount required? Is there no definite rule to guide us as to how much to feed to a good strong colony daily? Those who advocate and practice feeding should be able to tell us somewhere near how many pounds or ounces per day, will put the queen in the best possible humor for depositing eggs rapidly and right end up with care.

Secondly.—The honey emptying machine has been described many times in the Journal, and directions published telling us how to get up home-made machines. But the writers all forget to tell us what kind of wire cloth to use to support the comb in the machine. In the construction of my machine, I first used fine woven wire, but it was liable to clog and required greater speed to extract the honey. I now use coarse wire cloth, with better success; yet think of dispensing with wire cloth altogether another season, and use long strips of tin, one inch wide, doubled lengthwise and placed about one inch apart. I operate the extractor in our cellar, which is a very convenient and capital place. The honey runs directly into a strainer, and from thence into jars or barrels. My strainer will hold twenty-five pounds, tapers down to a point, and is provided with a stop-cock at the lower extremity. Jars placed on the scales under the strainer, can be filled to a nicety, and not a single drop of the precious sweets wasted. I find it pays, in the long run, to have everything in the apiary fixed and convenient.

Thirdly.—Movable comb hives are indispensable to successful bee management; but among all the *pros* and *cons*, descriptions and controversies, the length and breadth of the frame is discussed continually, still I have seen no word about the thickness of the frame. Perhaps thickness was settled before I caught the bee fever, about two years ago. But examination of hives at present shows a diversity of construction upon this point, for frames raging from $\frac{7}{8}$ inch to $1\frac{1}{8}$ inches in thickness, are used. In the American, Bay State, and others, $\frac{7}{8}$ inch is the standard. Mr. Quinby uses an inch frame, with half an inch space. Others use $1\frac{1}{8}$ inch frames, with $\frac{3}{8}$ inch space. And here I would ask Mr. Quinby what is the use of so much space between the frames? Are not the bees inclined to fill out the space, and build more drone comb, than in a thinner frame? My little experience leads me to discard thick frames, for my bees seem determined to build drone comb in all thick frames, while $\frac{7}{8}$ inch frames give better results. And I can see but a trifle difference between Mr. Quinby's inch frames and half-inch space, and a $1\frac{1}{8}$ inch frame with $\frac{3}{8}$ inch space.

A large number of beekeepers will soon be constructing their hives, and a little light from those who have experimented and given the subject years of thought, would no doubt interest a large number of your readers. We want the *thick* and *thin* subject agitated, as well as length and breadth.

SCIENTIFIC.

[For the American Bee Journal.]

The Onward Movement.

MR. EDITOR:—I send you to-day two dollars for the seventh volume of the Journal, for a young man who has never kept bees, but who is going to begin; and he will succeed, for he commences with the Journal, as his *first step*.

It has been my experience that those who have kept bees *for years*, in the old way, and ought to have gained at least a *desire* for improvement, are slow to adopt new ideas; while the new beginner is all alive to its importance, and will commence with movable combs and Italian bees, and comprehend their value, while

old fogies are plodding along with their brimstone boxes, and complaints of poor seasons and poorer luck.

In this section of country the season of greatest harvest varies very much from year to year. This year it was in August, from Clethra (pepper bush) and red clover; last year it was in September and October, from the Michaelmas aster and the golden rod; and the year before it was during July, from white clover.

Those who keep their stocks always strong, do well; while the rest go hit or miss. For instance, this year, from my eight or nine colonies, I have gathered over four hundred pounds of honey, and increased to eighteen colonies. Others in this neighborhood have not had a pound of surplus honey from a greater number of stocks; and it is not at all strange that young beginners ask my advice, instead of going to those who keep bees in hives and with the ways handed down from their great grandfathers.

In reading over quite a number of books which have been published for the last hundred years on bees, I was astonished to find so much in them which harmonizes with modern ideas, and so much also which has been claimed as new inventions and recent discoveries—movable frames, guide combs, artificial swarming, stimulative feeding in the spring, uniting weak colonies in the fall, the use of puff ball and tobacco smoke, side surplus boxes, ventilation or air chamber over the combs in the main hive, and under the surplus boxes, the treatment of foulbrood a hundred years ago by *pruning* and extra feeding. All these, and many more points of interest, are plainly discussed; and there is only one solution to the mystery that so few knew of or appreciated them, and that is—"*Our Journal*" wasn't born. Yours, very truly,

E. P. ABBE.

New Bedford, Mass., Nov. 20, 1871.

☞ There are folks who wish in their hearts that the AMERICAN BEE JOURNAL had *never been born*, since they can no longer venture to palm off old things as their own *discoveries*, without fear of detection and exposure.—[ED.

[For the American Bee Journal.]

Start of a New Correspondent.

MR. EDITOR:—I am a new beginner in apiculture, and wish to ask one or two questions. *First.*—How is it that we hear so many bee men talking about *swarming time*, and letting bees swarm when in movable comb hives? I take it that one of the great advantages of the movable comb hive is that colonies may be divided up at the owner's will, and not have any "swarming time."

Second.—What is the best plan to work on when transferring from an old box hive to a new movable comb hive? I hear some say that they have taken the old hive, and turned it bottom side up, and set the new hive over it, rapping smartly on the old hive, when the bees would all leave, and take to the new hive. I have tried it n the month of August, when there were a great many young bees, and could not in any instance drive more than half of them, as the young bees would not leave the combs. But the last ones I transferred I got out with very little trouble, in the following manner: I took the old box hive and carried it away a few rods from its stand, turned it bottom side up on a suitable bench or a box. Then, with a cold chisel, cut the nails so that I could take off one side of the hive. By the time I have pounded enough to cut the nails I will have the bees in a much more tractable state, and the young bees will crawl over on the outside of the hive, and cluster and stay until I get ready to shake them into the new hive. After cutting out the honey, I shake the young bees into the new hive, and the old ones will have flown to the old stand, where a decoy hive or box should have been placed to receive them. These I also shake in front of the entrance of the new hive. The brood combs I transfer to frames, fasten them with wooden pegs, and insert in the hive immediately. Now, I am a new hand, and may have asked questions which have been answered many a time in the Journal; but I have not seen it, of course.

I started with two colonies, which I bought last spring—one in a box hive, and the other in a small tobacco keg. The small one I had to feed to bring it through. The keg colony gave me a natural swarm, June 20th. The other did not swarm at all; but about the first of August I made an artificial swarm from it, by taking four or five quarts of the bees that were clustered outside of the hive and putting them in a new movable comb hive, with one or two frames of brood comb, and setting the new hive in place of the old one, and setting the latter away in a new location. In sixteen days I found that the bees in the new hive had a new queen out (there were no queen cells in the brood combs inserted), and in less than one week she was laying eggs. The frames of brood were taken from a young swarm which I bought for three dollars—furnishing the hive myself. Soon after this I made two swarms of the young swarm from the keg, and also transferred both old colonies to new movable comb hives. On the 21st day of August I transferred two swarms, and gave them three frames half full of brood combs from their old hives, but no honey; and in three weeks they had three hives full—sixty pounds each. The bees and brood combs were given me if I would take the honey out.

I have now eight stands, all in movable comb hives, and intend to do something more next year. I have done almost all kinds of handling with them, except introducing queens, and shall try that next year. I never saw but one swarm of Italian bees, and they were so cross that I could not see them until they were out of sight, for they drove me out of the yard several times. They were said to be pure Italians, but I doubted it and thought they were hybrids, for they acted like yellow jackets.

One thing more, and I will bring this communication to a close. For one of my neighbors I drove bees enough from a colony to make a new swarm, and placed them on the old stand. They had not been there three minutes before another

swarm (which had been transferred two weeks previous and were working well) were coming into this hive, and all went to work as peaceably and quiet as any single swarm. The swarm that left its own hive had several pounds of honey and plenty of brood in all stages. It made a good thing for the new swarm, for it gave them a queen at the start to go to work with. Who can account for this occurrence?

I consider the Journal an invaluable aid to bee-keepers, and could not think of being without it now. You may count me in as a regular subscriber, and I shall probably not inflict so long a communication on you very often.

J. W. CRAMER.

Oneida, Ills., Dec., 1871.

[For the American Bee Journal.]

Lessons of the Past Season.

MR. EDITOR:—As an inducement to others to report their summer's work through the Journal, I have concluded to send you a statement which approximates very nearly what I have done for my bees, and what they have done for me. "Old fossils," as a matter of course, will pursue "the even tenor of their way" despite all "book larnen" and reports, but to the wide awake, live apiculturist, the experiences of others form a "bed rock" upon which to rest secure from defeat and disaster.

I used the honey-slinger only a little, by way of experiment, and that near the close of the season.

I commenced last spring with ten hives of bees, which have increased to twenty.

Box honey procured	510 lbs.
Extracted	40 "
	550 lbs.

I have sold 248 pounds of it at an average of 27 cts. per pound, making $66.96. The remainder, for the sake of carrying out this calculation, we will estimate at 25 cts. per pound, making for it $75.50.

Total value of honey	$142 46
Value of colonies	200 00
Aggregate worth of honey and colonies	$342 46
From which deduct,	
Cost of ten new hives	$25
" " honey boxes	10
" " 10 old colonies	100–135 00
Net balance	$207 46

Being about 153 per cent. on the investment.

Seven of the colonies furnished no box honey. The average yield of the remaining thirteen colonies was 39¼ lbs. each. Greatest yield from any one of the thirteen was 98 lbs., least yield from any one of the thirteen was 18 lbs. I might have taken more honey, even in boxes, but as bee-keeping is a collateral business with me, I failed to give my apiary sufficient attention during the honey harvest. The colonies are all in good condition for winter.

PRINCIPAL HONEY HARVEST.

I commenced taking honey the last week in August. Swartweed or "heart's ease," as it is called here, furnishes the best honey and the most of it. The last run was upon the golden rod, and the "thousand and one" other yellow blossoms that deck the prairies late in the fall. The last combs built are of a yellowish cast. All those from the "heart's ease" are light colored, and very rich and attractive in appearance.

The President of our State Association, Dr. L. J. Dallas, of Baldwin, has about four thousand (4000) pounds of it bottled up and for sale; so that if any one is curious to know just how nice this "*Extract of Kansas Swartweed*" tastes, he will know where to get it. I do not design this as an advertisement for the Doctor, as he will have no trouble in selling it at a fair price, without such notoriety.

GENERAL REMARKS.

I am using some hives of my own "getting up;" some of the Hoosier; some of the Adair; and some of the Quinby box hives.

I have one stand of Italians, and four hybrids; the others are large, light colored blacks. The hybrids have done better than the pure blacks, and as well as the pure Italians, but I think that the pure blood Italians, everything else being equal, are better adapted than the blacks or any cross with them, to the climate, as well as to the great variety of the pasturage found upon the plains of Kansas.

M. A. O'NEIL.

Black Jack, Nov., 1871.

[For the American Bee Journal.]

A Bee Feeder.

DEAR JOURNAL:—We are an ardent advocate of stimulating bees in early spring, and through August and September, let the hive contain ever so much honey. Novice's idea of "cash capital" in the form of capped honey in frames, is good—nothing better for strengthening weak stocks; yet we do not always have as much as we need, and if we had, we want to give it more in the form of natural supplies to induce breeding.

We have been using a feeder this fall which, for cheapness and utility, we deem the *ne plus ultra* of feeders; and with your permission, Mr. Editor, will try to give a description sufficiently plain that those "who run may read."

We make a frame say six inches square of slats one inch or more wide; cover this one side with thin muslin, drawing the edges of the cloth up all around the frame on the outside, and tacking them to the top. Then we make another frame of slats half an inch wide and six inches square. This is nailed on the bottom, leaving the muslin between the frames. The feeder may be placed over any sized hole in the honey board, where the bees can readily pass under it, without obstruction or having to climb

several inches. By removing the honey board, it can be set on the frames; but it will then be necessary to lay something over the top. If "liquid sweets" run through faster than is desirable, melted wax may be spread over a portion of the bottom, or thicker muslin may be used.

RUSTICUS.

Ohio.

[For the American Bee Journal.]

The West St. Louis County (Mo.) Beekeepers' Convention.

The first quarterly meeting of the "West St. Louis County Beekeepers' Association," was held at Manchester (Mo.), on Saturday, October 14th, 1871.

In the absence of the President, the Vice-President, J. C. Holocher, was called to the chair. The minutes of the last meeting were read and approved. The next order of business was the reading and adoption of the constitution, which, after considerable debate, was, with some modification, adopted.

On motion of A. Herzog, a committee of three was appointed to prepare subjects for discussion—namely: T. D. Woody, G. Kropp, and W. H. H. Woody.

Pending the action of the above named committee, the Vice President addressed the Convention in regard to the object of the same, briefly touching upon several very important points pertaining to apiculture.

The committee reported the following topics for discussion:

1. Natural *vs.* artificial swarming.
2. When is the best time for placing surplus honey boxes on hives?
3. What is the most profitable size for honey boxes?
4. Bee pasturage.
5. Wintering bees indoors or out.

These topics were then taken up in order, for discussion.

1. INCREASE OF STOCKS—NATURAL *vs.* ARTIFICIAL.

Mr. Kropp said he had no success whatever in the increase of stocks artificially. He had tried it, but the bottom had fallen out. He favored increase by natural swarming, and considered such swarms superior to any artificially produced.

Mr. W. Woody said that artificial increase of stocks was best for one reason; you could increase them to the amount desired with less trouble, and have them in better condition for wintering, than if natural swarming be relied on.

2. BEST TIME FOR APPLYING SURPLUS HONEY BOXES.

Mr. T. H. B. Woody thought the best time for putting on surplus honey receptacles was (if pasturage was favorable) as soon as convenient—the sooner the better; for a few days lost can never be regained. He would suggest, that as soon as the bees showed signs of gathering honey from the fields, was the time when boxes should be placed on hives; and as soon as filled and capped over, they should be taken off, and other boxes substituted in their stead.

Mr. Kropp said he practised the same method, but found that after the removal of the field boxes, the bees did not like to resume work in the empty boxes given to them. For one, he should like to know if there was no way to compel them to work in the empty boxes given them.

Mr. J. C. Holocher said he did not know of any way by which bees could be made to work immediately in boxes, without inserting a small piece of comb in the box. This, he believed, would answer the purpose admirably.

3. MOST PROFITABLE SIZE OF HONEY BOXES.

Mr. Herzog thought that boxes with glass sides, that would hold about four-and-a-half or five pounds, are the most profitable size.

Mr. J. C. Holocher thought that boxes containing about eight small frames—each frame weighing from one to two pounds—are the proper size for market. They will sell more readily, and have a better appearance.

Mr. Dosenbach had had no experience in selling or raising honey, for he had just commenced beekeeping last spring. The season was not favorable for storing surplus, but he thought the small frames the best.

Mr. T. H. B. Woody did not want box honey at all. He believed in the use of the melextractors, for you could get a larger yield, besides returning the empty combs to the bees, which was of great advantage to them.

Mr. Kropp thought boxes would do for him, for a person was liable to "sling too much from his bees," if he uses the extractor.

The hour being late, and some of the members wanting to leave for home, the remaining two topics were laid over until next meeting.

Having no further business for the convention, Mr. Whiting, of Pacific, (Mo.,) was called on for an address on apiculture, to which he responded substantially as follows:

Ladies and Gentlemen: I must confess that I am unprepared for this occasion. Being called on so unexpectedly, you must not expect me to begin at one end of bee-culture and go to the other; but I will briefly touch one or two minor points. *Who should keep bees?* I reply, one and all. All persons who own a rod of land should keep bees; and if you do not have the rod of land, keep them, any how (Laughter). If you reside in the city, it affords you an opportunity to keep bees. If you live on the mountain tops, or in the vale; if you are a mechanic, or a farmer, or a lawyer; whether you are rich, or walk in poverty's vale, you can keep bees; and they will return you a handsome reward for your care and trouble. Allow me, therefore, to say to one and all, "*keep bees;*" and to keep them successfully, it is of no difference whether you own a foot of land or not. You have a free pasturage for your bees. "*Keep the bees,*" and they will get the honey for you (cheers). Now, kind

friends, I must bid you adieu, and close my short address. But I will say, go on with this work, and read on, and put it to the test. This is the only way to keep clear of all humbugs. Remember that bees need attention in the proper way, and at the proper time; and if you attend to this rightly, you will undoubtedly reap your share of success. With this I close, thanking you for your kind attention and hospitality during my visit.

At the close of this address, the association returned their sincere thanks to Mr. Whiting for the interest he had taken in the association, and in beekeeping generally.

On motion, it was resolved, to hold the next meeting at Ballwin, on the first Saturday in January, 1872, commencing at 10 o'clock, A. M.

On motion of Mr. Dosenbach, the association then adjourned.

J. C. HOLOCHER, *Vice President.*
ENUE DOSENBACH, *Secretary.*

[For the American Bee Journal.]

Notes from Northern Iowa.

DEAR JOURNAL:—Perhaps a few notes from Northern Iowa will be as interesting to the readers of the Journal, as notes from other States are to me. I see the accounts from some parts report a total failure of the honey season, while in others it was tolerably good. We have had an extra good season here, both for surplus honey and for increasing stocks. My bees stored honey from the 15th of April to the 15th of September (five months), without any cessation. I had twenty stocks in the spring, which I have increased to fifty, and have taken sixteen hundred (1600) pounds of surplus honey. I did not get an extractor till after the basswood season was over, or I would have taken one hundred pounds from each stock. I had eight colonies in the spring that gave me eight hundred (800) pounds of honey and ten new swarms. My new swarms are mostly artificial.

The plan I adopted was to drive out a swarm and set it in the place of the parent stock, and remove the parent stock to the place of a strong colony, removing the strong colony to a new place. I do not know which is the best plan to make swarms, but all plans worked well this year. After I had doubled my colonies by artificial swarming, they swarmed ten times more, just to show me that I wasn't boss.

My bees were all black, that gathered the honey; but through the kindness of friend Gallup, I obtained nine nice Italian queens, which are all comfortably situated in their new homes. I also sent to Adam Grimm for a queen, which came by return mail, and has proved to be all right.

I am a new beginner in the improved style of beekeeping. Last spring I said to my neighbors that I intended to double my stocks and take a thousand (1000) pounds of surplus honey. They said I had "bee on the brain," and that I would meet with obstacles enough before fall to cool my fevered brow. But by the help of the American Bee Journal, and many valuable lessons from Gallup, I have succeeded far beyond my expectations.

Mr. Editor, I think that "bee on the brain" is essential to success. If a person has other business on the brain, his bees will go neglected. I take solid comfort in my daily walks among my little busy workmen, while attending to their many wants. My wife, who takes pleasure in assisting in the swarming season, often takes charge of them in my absence. But when it came to extracting, what then? Why, there was honey in every dish; honey all over the house; our hands and clothes were all daubed with honey; and, to put in the variations, the bees were so loving they lit on wife's face—eyes she had, but they saw not, neither did they want to see the bees again until a short time ago, when returning from town with a bundle of goods (bought with *honey*, you know), she gave them one look, which said: you little scamps, I forgive you.

I hope to meet lots of warm-hearted beekeepers at the Cleveland convention, where I expect to have a good time.

J. W. LINDLEY.

Mitchell, Iowa, Nov. 14, 1871.

[For the American Bee Journal.]

Report from Bethlehem, Iowa.

MR. EDITOR:—In compliance with your request, I send report for 1871. I will be as brief as possible.

In the spring, I found I had twenty-six stocks, in good order, one queenless, one crippled, and one black colony. The latter I had run against an artificial Italian, as reported in the November number of the Journal. It was so weak that it could not stand the cold, and gave up the ghost. The queenless one I doubled up, and killed the crippled one, giving the combs to others. Examined and equalized the colonies, gave each a due share of bees, as near as I could, and about fifteen pounds of honey.

I also bought four swarms in gums and box hives. Two of these had cast swarms before I got them home. All new swarms were fed until their hives were built full of comb, when the weather rendered it necessary.

The result of the season's operations, was an increase to forty-nine (49) strong stocks, and two weak ones.

2,550 pounds of extracted honey.
1,502 " of box and frame honey.
500 " in old combs.

I cannot say much of the manner in which my bees have been put to into winter quarters, on account of the very serious accident I met with, which prevented me from overhauling them before putting them away. I had put in empty frames for them to fill. They usually lengthen out the cells, when put in late in the seson, instead of starting new comb.

FRED. CRATHORNE.

Bethlehem, Iowa, Dec. 11, 1871.

[For the American Bee Journal.]

Inquiries and Remarks.

MR. EDITOR:—I wish to ask several questions through the Journal, and will try to answer some in the first place.

I received two splendid queens from friend Benedict, on the 9th of August, and introduced them to black colonies in the afternoon; the first one according to his directions, by placing her on the comb near the centre of the chamber (only I dipped her in sugar syrup scented with peppermint; with which I also thoroughly sprinkled the bees, shaking them up well before turning them out of the box, instead of diluted honey, as directed.) This was done at about three o'clock, and the next day at about noon, I went to the hive and saw a dense crowd of bees in one of the entrances. I scraped them out, and there they had the queen hugged up in their centre. I released her and put her in a cage, which I inserted between two brood combs. She did not appear to be hurt, but the next morning she was dead. Why did they drag her out, after so many hours?

With the other one I followed D. L. Adair's plan, by scenting all alike and dropping her in among the bees. She was well received, and has done well. On the evening of the sixth day I brushed all the bees that had killed their queen from the combs in the chamber and removed the chamber from the case that had the Italian queen and put the other in its place. I brushed the queen and bees all off in front, and gave the chamber to the queenless colony. On the eighth day I opened it and found two queen cells capped, and three more started on the face of a piece of drone comb. I caged the two that were capped with Novice's cages, according to his directions, and when I opened the hive to see how the young queens were getting alnong, I found the cages cut loose, so that they dropped out when the sections were parted, and both queen cells destroyed. Two of these cells on the drone comb were capped over, but neither of them ever hatched out. I tried the cages on two more cells in another hive, and they were also cut out; but one of the queens was all right, and is doing well. Now I would like to know why it is so, if Novice's bees do not cut them out?

Next, I would ask Mr. C. E. Widener why a piece of wire cloth, two feet by four, would not be as good, or better than a piece three feet square, to make his wax extractor? It would make a box of one foot square and two feet high, which could be put in a much smaller kettle, than a box nine inches square and three feet long.

Then, again, I would like to know what is to become of the brood and eggs that are in the combs when introducing queens by the German process, on page 98, November number.*

Some one has asked how to keep the worms out of the hives? I would answer, simply by keeping your stocks strong, especially if there is any Italian blood about them. I had a box hive of black bees that got weak, and one morning I saw robbers pitching into it. I closed the entrance and carried it to the cellar, letting out the robbers when I got inside the door. Next day, about ten o'clock, I removed a stock of hybrids (which I suppose has a black queen that mated with an Italian drone, as I know of no chance for an Italian queen to have got in there), to the place from which I had removed the weak stock, and set the weak stock in the place of the hybrids, never dreaming that it was infested with worms. Next morning I saw that some cocoons had been carried out of it, and on turning it up I found a good handful of shatterings that the bees had made in cutting out the worms and cocoons, besides about twenty cocoons and a great number of worms of all sizes. I cleaned out the shatterings every morning, and in four days all cutting out ceased, and I did not find another worm in the hive all summer. This fall I transferred it to a frame hive, and did not find a single worm in the combs, though they were badly cut up near the top of the hive.

Trenton, Ills., Nov. 6, 1871. C. T. SMITH.

* See note on page 167.—[ED.

[For the American Bee Journal.]

The Season of 1871, in the Oil Region.

MR. EDITOR:—It is a long time since I have contributed anything to the Journal and as I have seen nothing in it from any of the beekeepers in the oil region, I concluded to write a few lines.

We are on a level here now with many of our friend beekeepers throughout this broad land, for we have had a very poor season here for both honey and increase. Very few swarms issued this summer, in this section. I had only ten swarms from seventy-six stocks. My first swarm (a hybrid) came off May 19th, and this new swarm swarmed June 27th. My first swarms of black came off June 30th.

The spring of 1871 opened exceedingly promising, both to the farmer and the beekeeper; but the drouth in May materially checked the prosperity of the latter. Our stocks were not as populous on the 1st of June as they were on the 1st of May. I saw drones flying in my yard in April, which I never saw before since I have kept bees—now seven years.

Now as concerns the honey slinger, I do not think its use would be altogether economical for this section, as our only dependence is white clover and buckwheat. Now suppose we had abstracted the clover honey, and depended on buckwheat for winter stores, would we not have been far below the level of many beekeepers who have a continuation of forage throughout the season?

Old stocks generally are in good condition for wintering, but the swarms are not. We have had a very changeable season, with frosts in every month except August, since October, 1870, and of course shall have for the next six months. Drouth was the cause of the total failure of buckwheat honey.

I met many of my neighbors at the election, and after inquiring after the welfare of my family and bees, some wanted to buy bees, and

some wished to engage hives. Mr. G. said that he had bought the right of the American hive for this township from Mr. King. I told him that Messrs. L. & H. own the township, having bought it three or four years ago. *Well, I don't care* said he, *I have paid Mr. King for it, and am going to have it.* Now said I, Mr. G. I reckon you are pretty badly sold, and drawing from my pocket the October number, volume seven, of the American Bee Journal, read him Mr. E. Liston's article on page 82, and also some other articles in the same number, and then asked him how is that for high? This is the paper you want to pioneer you through. It will knock all this humbuggery higher than a kite. Suppose you bought the right, what do you get? Oh, the side opening, &c., &c., said he. Now, replied I, look out for breakers, and look before you leap. The word American is a great word, and this American is a great nation; but the American hive is no *g-r-e-a-t t-h-i-n-g-s.* M. WILSON.

Meredith, Pa., Oct. 16, 1871.

[For the American Bee Journal.]

A Word of Explanation.

Our correspondence extends from Maine to Oregon, and from Canada to Texas, *all free of charge*, and before publishing the article charging the dollar, we had as high as thirty-six letters in one week, on the hive question, leaving out of view our correspondence on other subjects pertaining to bees and bee keeping. We did not wish to give a description of our hive to every one, until we had fully tested it ourselves, for after what Mr. Alley and Mr. Green said of us we actually did not know how much of a *fool* we might be. Another thing—it is not to be supposed that every *green-horn* can manage a large hive until after he has learned to use a standard hive.

Our article referred to above was intended as a burlesque on those chaps that have a hive that beats all other hives in existence, &c., and the dollar that has caused such a *fuss* was intended to stop the costly correspondence, which we are foolish enough to think that no person living would or could stand. And it has done it pretty effectually.

We had our reasons for getting up such a hive as we have, and any person who has attentively read our articles ought to know that when the proper time came we should certainly give them the description *free of charge.* It would be for our personal benefit and a great relief to do as Novice does—that is, refuse to answer correspondents entirely. But when we come to consider how many thousands there are that wish for information, and yet feel a delicacy about asking for that information publicly we cannot refuse. Therefore after working hard all day we devote hours of the night, when others are sound asleep, to answering the inquiries of correspondents, and yet for all this, see the *kicks, cuffs* and *abuse* we receive through the Journal from certain gentry of the long-eared persuasion. Please excuse us, Mr. Editor, for giving them just one little touch of our pen. The worst we wish them is that they might be placed in our position for one year. We would also state here that a Mr. Jones, of some place in Canada, sent us a dollar, but neglected to give us the name of his post-office. Will he please take notice?

THAT HIVE OF GALLUP'S.

Our standard hive is twelve inches from front to rear, twelve inches high, and eighteen inches wide, inside measure, containing twelve frames, and having a cap eight inches high. Our nucleus hive is in the same form, containing twelve frames, with four apartments, each apartment containing three frames (standard frames). We will say it extends east and west, or is an oblong square. The entrance to one apartment faces the east, one south, one west, and one north, with a honey board over each apartment, so that each can be opened without disturbing the bees in the others. In one of these nucleus hives we raised the past season twenty-eight queens; had twenty standard frames filled with nice worker combs, extracted sixty pounds of surplus honey, and are now wintering four spare queens in it, with abundance of honey to winter on. Now you can readily see that in the fall we can readily put all those combs and bees together in a standard hive by removing three of the queens, and have a good standard colony. We can exchange combs, brood, &c., with any standard colony, for strengthening up, supplying with honey, or for any other desirable purpose. Four and a half inches is the right space for three combs, but we make it five inches. This gives ample room for handling, without endangering the queen. By working four nuclei in one hive they are of a mutual warmth, one to the other, and there is no more danger of losing a queen than there is where we have each separate.

Then we have what we call an *emergency hive.* If we run short of hives we can put one of these together in about twenty minutes, and by having a supply of frames on hand we are all right. This is simply an open box without top or bottom, containing twelve frames. We saw off a rough board for a bottom and one for a top, and put a swarm in. This hive can be completed at our leisure, so there is nothing lost.

Our next hive, in outward appearance, looks so much like a Langstroth hive, with Langstroth entrance blocks, that we really think he has somewhat infringed on our rights, and we take this opportunity of telling him so.* We call this hive our "Youreka, Back Action, Extraction, Reversible, Revolvable, Non-Swarming, Movable Comb, Twin Bee Hive." (Please to take notice that hereafter we shall charge a dollar extra for simply writing the name in full of this wonderful hive.)

This hive is simply a case made Langstroth style, with a centre board with passages for bees, and containing one set of our frames directly in

*Keep a sharp lookout, or the "Great [Humbug] American Apiarian" will *sneak* out a patent on these blocks, and prosecute both Mr. L. and yourself as *infringers!*—[ED.

the rear of the other portion, and entrances at both ends just alike. We made six of these containing thirteen frames in each apartment, or twenty-six frames to the hive. We made one containing sixteen frames in each aparrment, or thirty-two frames to the hive, and this gave us the most satisfaction. We made a cap eight inches high for appearance sake, and for wintering purposes, and thus we can set boxes over one set of combs and use the extractor on the other. We make the roof in the Bay State form, independent of the cap, so that it sets on over the chamber or cap, sugar box fashion. In summer if we do not use the cap we can lay it away, and the roof protects the main hive.

In future we shall make the caps high enough to hold a set of standard frames for some of our queens occupy the entire twenty-six frames, over four thousand (4000) cubic inches, with brood, and we are bound to furnish them with room according to their strength, even if they do lay themselves to death, though we have no fears on that head. Now we shall have our fifty-two frame hive, a thirty-two frame hive, a twenty-six frame hive, a twelve frame hive, and nucleus hives, all containing the same size frame, and any frame in the yard will fit in any hive in the yard, and in any place in any hive, and they are all reversible.

This article will be too long to permit us to give the management, but, friends, we will now come down to dead earnest. No joking now! A large colony of bees will store surplus honey, while a small one scarcely makes a living. Any colony, especially the Italians, will store more surplus honey in the same apartment with the queen than they will otherwise. Nearly every person familiar with the Italians has noticed this trait in their character—that is, their reluctance to take possession of surplus boxes, in comparison with the black bees. This was very forcibly illustrated by Mr. Langstroth at the Cincinnati Convention. When we give the queen room according to her strength, she will breed beyond all our previous calculations—that is, a good, prolific queen. A hive to suit our notions must be so constructed that we can enlarge or contract the brooding and storing capacity at will; or, in other words, one in which we can manage the smallest or the largest swarm to best advantage.

As this article is getting long, and we must soon close. Our first swarm came out on the 14th of May. We hived it in one end of our thirty-two frame hive, making use of the division board the same as we do in our standard hive. As soon as the bees commenced building drone comb we removed the division board and filled up with worker combs. When these were all occupied with brood we filled the other end of the hive also with worker comb, moving some of the sealed brood into that apartment, and replacing with empty worker comb in front. The queen soon began to spread herself most gloriously into all parts of the hive, and when the basswood began to bloom, we had a bursting swarm in that hive, you had better believe. The last of June we commenced using the extractor, first taking all the honey from one end of the hive, and the next time all from the other. We extracted from that hive every third day, and we now know that we ought to have taken it out every other day, for it was all of it half sealed every time, which you will readily see involves a loss of time, a waste of honey, especially when they are gathering rapidly. At one time I did not overhaul it for five days. Consequently they filled up the combs, built queen cells, and on the 4th of July out came a rousing swarm (celebrating the 4th, I guess). I have them in a box, extracted all the honey from the parent hive, cut out the queen cells, and returned the swarm. They went to work with a will. In overhauling the hive I endeavored to keep the brood about equally apportioned in each apartment. The queen passed into all parts of the hive freely, and the workers poured out and in, at both ends of the hive. The regular entrances were left open to their full capacity, besides an inch hole in the centre of each end, yet during a large part of the time both porticoes were clustered full of bees at night, when they quit work.

In thirty days I obtained from the hive fifty (50) gallons of excellent thick honey (a gallon will weigh twelve pounds). An average of twenty pounds per day for thirty days in succession is not bad for one swarm of bees. I took five and a half gallons from that hive the first week in September, have at least six gallons more in the hive, over and above what will be required for wintering the swarm.

Mr. Editor, please to tell Novice that I am not going to tear down that hive yet. My better half suggests that I put on a steeple, and call it a church instead of a bee hive! What a congregation, and what excellent sermonizers.

And now, Mr. Editor, if any more of them 'ere donkeys wish to bray at Gallup, don't hold them back a particle, just let 'em bray!

Orchard, Iowa, Dec., 1871. E. GALLUP.

[For the American Bee Journal.]

A Puzzle.

Some time in August, last summer, I killed the virgin queen of a nucleus hive, because the bees had crippled one of her hind legs so much that I feared she was unable to become fertilized. Next day I opened this nucleus for the purpose of inserting a new queen cell, and found the bees perfectly quiet and content. On examination I found among them an apparently fertile queen, whose wings were clipped. As there was no other nucleus within ten feet of this one, where did this queen with clipped wings come from? There was standing at that distance, directly behind this one a nucleus which had swarmed off; and as at that season of the year, I nearly always clip the wings of the young queens as soon as they become fertile, the queen of this decamping swarm could probably not accompany the workers, may she not have fallen to the ground and afterwards travelled ten feet ahead, and then been *boosted* up by the workers of the other queenless nucleus? Or how did such a queen get in there? A. GRIMM.

Jefferson, Wis., Dec. 1871,

THE AMERICAN BEE JOURNAL.

Washington, January, 1872.

1872.

While politicians are cogitating and agitating the question of a *new departure* or of *no departure*, seemingly with little prospect of reaching a satisfactory solution, beekeepers may, we think, look forward with confidence to an extraordinary and unprecedented advance in their business in the year on which we are just entering. They are on the verge of a new era—old modes and practices, old-fashioned hives, and hives as hitherto constructed, are destined to be superseded; and that which a few years ago was a mere by-play in the commerce of the country, is about to assume a prominence and an importance hardly conceived of even by the sanguine a year ago. But those who would reap benefit from this progress in improvement, must keep themselves advised of each onward movement as it is made.

☞ Very many articles intended for this number of the Journal, reached us too late to be available. The holidays compel us to be early on the ground, or lag lamentably in the rear.

☞ We have received a copy of "VICK'S ILLUSTRATED CATALOGUE AND FLORAL GUIDE," for 1872, published by James Vick, Rochester, N. Y.,—a decided improvement on those previously issued.

☞ The instrument called *rafraichisseur* by the French, and used by them for perfuming gloves, handkerchiefs, &c., which we mentioned two years ago, as employed by Major Von Hruschka in introducing queen bees, is simply the instrument long known in this country as *the atomizer*. It is made in various styles, and sold at prices varying accordingly. It can be readily obtained from or through any druggist. Very good ones are sold here, in Washington, at fifty cents each, and they are quite as efficient for the purpose designed, in bee-culture, as those much higher in price.

☞ We do not share the apprehensions of several of our correspondents, as regards the overstocking of districts with bees, or over-production of honey. In a new business, such as beekeeping for commercial purposes is, occasional difficulties will undoubtedly present themselves, but are sure to be of only temporary force. It will be some years yet before the ordinary sources of forage in any district will prove inadequate to supply the colonies kept there, if these be properly managed; and then artificial pasturage can be furnished to an almost unlimited extent. Amid a large and rapidly increasing population, also, the demand for honey is a certain and growing one, and likely to keep pace fully with the supply. Of course, we do not suppose that "fancy prices" can or will be kept up, nor is it desirable that they should be; but the business will, on the whole, always be remunerative, especially as new uses for the article will, from time to time, come in to sustain the markets. With care and attention almost every beekeeper can open and secure for himself, in his own neighborhood, a good and steady market for the product of his bees; and then, even "extracted honey," which now causes so much uneasiness in some minds, will command a good price, and be readily sold. This home market, within his immediate reach, the beekeeper who aims at a steady and *paying* business, should strive to establish and cherish. Suddenly rushing large quantities of honey to a market unprepared to receive it, and there ordering forced sales, will, as in the case of any other article of merchandise, produce depression of price and loss. This should be avoided, and may readily be guarded against, as honey is by no means a perishable commodity that must be promptly disposed of, like the small fruits of our gardens and orchards, but can be easily and safely kept stored (especially in barrels), and brought out as called for by the requirements of the market. Dealers, too, will soon become aware of this fact, and supply themselves with honey, as with other merchandise, to provide for the exigencies of trade.

German Beekeepers' Convention.

The Seventeenth Annual Meeting of German Beekeepers was held in the city of Kiel, in Holstein, on the 10th of September, and the three following days. Professor Hensen, of Kiel, was President, and Dr. Möbius, also of Kiel, first assistant or Vice President. The second assistant, Mr. Schmid, of Eichstadt, who is the only permanent officer, and is delegated by the Bavarian Government, was prevented by illness from being present, and Dr. Ziwansky, of Prague, was unanimously chosen to supply his place. There were about four hundred beekeepers in attendance. The President announced that donations for distribution as premiums on articles sent for exhibition, were received, as follows: from—

The Prussian Royal Agricultural Department	$300
The City of Kiel	300
The Agricultural Union of Holstein	50
Various Agricultural Societies	61
Aggregate,	$711

which would be allotted by the Committee on Premiums.

Mr. Mölling, as representative of the city of Kiel, made an address of welcome, and stated that the inhabitants of that city and of the entire province, were

rejoiced to learn that this useful body had selected Kiel as the place for the annual meeting in 1871, and were well aware that the selection had been made with the express design of promoting bee-culture in that quarter, where, though bees were kept, improved modes of management were scarcely introduced.

Then followed discussion of the various topics announced by the Executive Committee, consisting of the President and the assistants—the chief of which were Living Bees, Bee Hives, Implements of Bee-culture, Honey, &c.--the debate, in each case, being opened by the person propounding the topic, if he happened to be in attendance.

Salzburg, in Bavaria, was chosen as the place of meeting in 1872, and Count Lamberg was appointed President of that meeting, and Professor Dr. Königsberger, First Assistant. The city of Halle was named as a desirable place for the meeting of 1873.

The proceedings and debates have not yet been published, but will appear in the December numbers of the Bienenzeitung.

Beekeepers' Convention.

In conformity with the previous understanding the beekeepers convened at Cleveland, Ohio, on the 6th instant, united in one body under the name of the North American Beekeepers' Society, adopted a constitution, and elected the following officers:

President.—M. Quinby, St. Johnsville, New York.

Vice Presidents.—A. Benedict, Bennington, Ohio; J. E. Hetherington, Cherry Valley, New York; E. J. Peck, Linden, New Jersey; Seth Hoagland, Mercer, Pennsylvania; D. L. Adair, Hawesville, Kentucky; Dr. T. B. Hamlin, Edgefield Junction, Tennessee; Dr. G. Bohrer, Alexandria, Indiana; E. Rood, Wayne, Michigan; M. M. Baldridge, St. Charles, Illinois; R. C. Otis, Kenosha, Wisconsin; J. W. Hosmer, Janesville, Minnesota; Mrs. E. S. Tupper, Brighton, Iowa; A. S. Stillman, Louisiana, Missouri; Dr. L. J. Dallas, Topeka, Kansas; W. D. Roberts, Peru City, Utah; Rev. W. F. Clarke, Guelph, Canada.

Secretary.—H. A. King, New York.

Recording Secretary.—A. J. Cook, Lansing, Michigan.

Corresponding Secretary.—A. I. Root, Medina, Ohio.

Treasurer.—N. C. Mitchell, Indianapolis, Indiana.

When we receive them, we shall select from the proceedings of the society, such items as may appear to be of interest to our readers.

We are by no means partial to the plan adopted, of organizing a national *society*, as we do not believe that it will best conduce to the advancement of the object which should be chiefly aimed at—the promotion of bee-culture in the United States, or in North America. The meetings of bodies thus organized, will usually have a slim attendance, exert a very restricted influence, and ultimately fall under the control of a clique. We like the German plan much better, and the experience of many years shows it to be admirably adapted to rouse interest and spread information, both theoretical and practical, over a wide extent of country. Attempts may, even there, be made to *run* the meetings in the interest of designing parties, but they are quickly detected, exposed, and thwarted, by those who have no "axes to grind."

Mr. H. A. King, in desperation, has attempted to show that Mr. Langstroth did not invent the kind of movable comb frame which he has patented, and which has been so eminently successful in making bee-culture a pleasant and profitable pursuit. He hopes to effect this by presenting a list of parties who, it is claimed, also *thought* of this thing, tried to produce it, *and* FAILED. This is a very novel mode of ratiocination, indeed, and ought to entitle Mr. K. to a fourth or fifth patent, quite as good and valid as any he now has, or ever *pretended* to have. Invention, within the meaning of the patent law, we have always understood, was the "conception of some new and useful thing, and the embodiment of that conception in a *practicable* form;" and "he who first *perfects a device* and makes it *capable of useful operation*, is entitled to a patent, and is the *real inventor*, though others may have had analagous ideas, and experimented to bring them into use."

Now, how stands the case with these alleged prior American inventors? Admitting the accounts given by them to be true, it is notorious that their frames, and all their attempts to make and use them, were *decided failures*—so regarded even by themselves. They and their miscarriages quickly sank into oblivion, being dead and buried, till Mr. King, like a body-snatcher, comes and resurrects them from their graves, to string up their bones *in terrorem* in the limbo of some museum of misbegotten and abortive conceptions. Certainly their contrivances, whatever they were, *were not practicable* movable frames, like those of Mr. Langstroth, or there could be no controversy about them now. Nobody (except it be some sanctimonious skin-dresser) ever quarrels about the carcass of a skunk, but all rejoice when it is decently interred, and are glad to let it rest undisturbed. There never was a living principle in any of their inventions, or they would not have died and "made no sign." There was in their frames (admitting they ever made any) some inherent fatal defect or vice, involving failure as a necessity; for, despite of all their skill and efforts, the fact is patent and undeniable, that *each and all*, in order due, *did* FAIL. This uniform and universal disappointment, and the consequent abandonment of experiment after experiment, are the demonstrative and conclusive proofs of failure. *Success* is here the only infallible evidence of SUCCESS, and it utterly refuses to testify in behalf of any for whom claims are now set up; while it proclaims, trumpet-tongued, the *practical* efficiency and high

merit of the Langstroth frames. No sophistry can set this aside, nor will King's plausible effort to deck Falsehood in the garb of Truth, avail him aught in the end.

We have here referred only cursorily to the case of the American pretenders. That of the foreign claimants, we shall consider and dispose of when the Court has given King his *quietus*.

Mr. H. A. King sent us what purported to be a copy of the Baron of Berlepsch's Declaration. We declined to publish it:

1. Because, though obviously procured to be used in court, it is not in a shape to constitute legal testimony.

2. Because, even if all right in manner and form, publication before it is submitted to the court, is improper.

3. Because we did not know how much garbling it may have undergone in King's hands. We do know that he shamefully garbled Mr. Langstroth's letters to suit his own base purpose; and the presumption is, that he would not hesitate to garble the Baron's paper likewise, for a similar purpose. We did not feel disposed to be caught in such a trap.

4. Because we are not willing to be made instrumental, by him or any one else, in efforts to forestall public judgment, or mislead public opinion.

We say so much from respect to the beekeepers of the country, and not from any regard for Mr. K.

Mr. H. A. King says: "Many believe that Mr. Langstroth first heard of the German frames through letters to Mr. Wagner, prior to 1852." This is an insinuated untruth, about equivalent to an asserted falsehood. Before the spring of 1852, we never heard of Mr. Langstroth; and we never knowingly saw him, nor had we any conversation or correspondence with him till after the 1st of August, 1852. We always understood that Mr. Langstroth applied for his patent in December, 1851, up to which time, and for many months thereafter, there were no *practical* frames in use in Germany, as we are prepared to show.

[For the American Bee Journal.]

Introducing Queens.

Mr. Editor:—The German method of introducing queens, translated by you and published on page 98 of the November Journal, whereby all the bees are taken from the hive and kept in a box for twenty-four hours, seems to be all right, save in one important particular.

Would it not be *ruinous* to expose the brood for that length of time, without a bee in the combs?

There is no doubt that bees will accept a strange queen, very readily, when removed from their own hive; but the difficulty with me in thus introducing them has been indicated above.

I have found that if the bees are returned to their hive with the new queen, before they become thoroughly hungry and fully realize their hopeless condition, they are very apt to destroy her.

Should you be able to suggest a remedy, please favor your readers with it through the Journal.

Geo. S. Silsby.

Wintersport, Me., Nov. 6, 1871.

☞ The difficulty suggested, it strikes us is only apparent, in the case of common box or straw hives. It is not necessary, we apprehend, that *all* the bees, literally speaking, should be driven out; and from such hives this is hardly practicable. A sufficient number will always remain to take care of the brood; and, on transferring, these should have charge of the combs containing the unsealed larvæ, which alone require nursing and attention in ordinary temperature. Where movable comb hives are operated on, the combs containing unsealed brood may be placed temporarily in a nucleus hive, after the mass of bees has been shaken off by a sudden jerk or shock. A sufficiency of young bees will usually remain adhering to such combs, to protect and nurse the larvæ. If operating in cool weather, brood just hatched may need some further protection, such as placing the hive or nucleus in a warm room. But the sealed brood can safely endure exposure to a greater degree of cold than is usually supposed; and it is yet unascertained how much cold and deprivation larvæ, just hatched, can endure without injury. Of course, the less of either to which they are exposed, the better.—[Ed.

[For the American Bee Journal.]

Overstocking.

Mr. Editor:—I think this subject is deserving much more attention than it receives. In ten seasons and the following winters, since I commenced my experiments in beekeeping, two winters have passed very fatal to the interests of beekeepers in this immediate vicinity. In 1862 or 1863 two-thirds of the bees in this vicinity starved to death in the winter. I had been taught no danger of overstocking, and half or more of mine perished in the winter following. The harvest of 1866 again proved destructive to the bees in this neighborhood, from starvation. In 1869 the bees had increased, so as to reach a large number for our field, and two-thirds of the bees within a few miles in any direction, starved—perhaps three-fourths of them. To give an idea of results, I must refer to others, as after the first of the three starving winters, I fed my bees in October, and again early in the spring, to carry them through to the flowers. But one neighbor, who placed in winter quarters over thirty colonies, had four colonies to commence the next season with. They increased so rapidly that, in the fall of 1869, he had over thirty colonies. In the spring of 1870 all had starved to death but two. In the whole vicinity three-fourths had died off. One friend, five miles from me, who lived in a very favorable field, supplied abundantly with white clover, went as high as one

hundred colonies, but in the spring of 1870, all were starved but five.

The results in my own experiments, have been thus. In 1867, after so many perished, my best hive gave me one hundred and seventy-four (174) pounds; and my four best gave five hundred (500) pounds. In 1868, my best hive gave one hundred and forty-two (142) pounds; others decreasing in proportion. In 1869 I placed my bees in three fields, some two miles apart, and secured perhaps as average of fifteen pounds—the best might have given as much as forty pounds. Then followed the desolating winter of 1870. Three-fourths of the bees cleared out, dead. Bees with a fair field averaged about fifty pounds. My best hive gave me two hundred (200) pounds. This season, the bees in the vicinity having been increased by swarms, fell off, say twenty-five per cent., from last year in surplus. My best hive, that gave me two hundred pounds last year, fell off to one hundred and forty pounds. From past results I must expect less favorable returns next season.

With such results in succeeding seasons, ought I yield to the arguments so strongly urged that there is no danger of overstocking? If there is no danger of overstocking, why do beekeepers with a few hundred colonies, divide them into several apiaries and place them in different fields?

Rev. Mr. Langstroth writes—"Probably there is *not a square mile* in this whole country, which is overstocked with bees, unless it is so unsuitable to beekeeping as to make it unprofitable to keep bees at all." I think it probable that there are few square miles of ground occupied by farmers where one colony might not be kept on each hundred acres. With a non-swarmer, with box room for one hundred pounds of honey, that amount of honey, or even the half of it, would be very pleasant to the family. I think the family should wish to try it. If two, or three, or five colonies could find an ample field on that area, so much the better. No doubt the country affords fields where a hundred colonies would do well. If I had two hundred, I should rather have two fields for them.

I remember, seventy years ago, one hundred colonies in my father's yard. At the same time his brother had about the same number in his yard, three miles from my father's. *Now* their sons, in the same fields, have not been able to exceed about one-tenth of that number. I suppose our country affords every variety of fields, from one hundred colonies capacity down to one single one. If you put a hundred colonies, where but fifty can be sustained, or fifty stocks where but ten can be supplied, or ten where only five can be supplied, you overstock your field, and a large part of your bees will be likely to perish. Either our country has not such a variety of fields, or there is danger of overstocking.

JASPER HAZEN.

Albany, N. Y.

☞We incline to think that the unfavorable results reported above sprang rather from mismanagement or ill-adapted management, than from overstocking. It remains yet to be ascertained what one colony *seasonably made populous* and *duly so kept*, can be made to produce in any location in one season. But the beekeepers of this country are now in a fair way of finding it out; and when that is known, it will not be very difficult to ascertain how many more *such colonies* can be kept in the same location, without interfering with each other's productiveness in the aggregate.—[ED.

[For the American Bee Journal.]

The Diseased Stocks.

DEAR JOURNAL:—Since the date of my hurried note of Nov. 17th, my bees have continued to die. Up to date some fourteen stocks present sad evidence of disease, while more dead bees are found on the bottom board of nearly every hive in my apiary than should be thus early in the winter. The mortality is greater among the Italians and hybrids than among the black bees. The bees fall to the bottom board in a stupefied condition, very few seeming able or willing to leave the hive of their own accord. Some, however, remain on the top of the frames, and others between the combs. I have resuscitated quite a number of deceased bees after they were subjected to three or four days of freezing weather, away from their hives. I examined the stock first alluded to, inspecting each comb in turn and as nearly as possible left out all the diseased bees. For a few days I thought the proper remedy had been applied; but it was not so, for they are now dying as before. I detected nothing wrong with the honey, but still that does not argue that the "wrong" was not there.

I concur on the editor's suggestion that the honey may contain a noxious property, but where did the bees gather it? It was not from the *fir* tribe; as there is scarcely a fir tree within foraging distance. Hence we must look elsewhere. If a portion of the honey does contain the "fatal principle," how are we to detect it, as we are not sufficiently versed in chemistry to analyze it? I shall take away the stores from the stock just affected, and give them sugar syrup, adding a small proportion of glycerine.

W. D. MANSFIELD.

Canaansville, Ohio, Dec. 11, 1871.

☞With the above communication we received a small box containing a number of dead bees from the diseased stocks. They do not look like bees that have died of old age, and there is nothing in their appearance which indicates that they perished from any slowly operating cause; nor have they the peculiar offensive smell that attends or proceeds from foulbrood. Under the circumstances we think, with Mr. M., that change of diet is probably the most efficient means available for arresting the malady.—[ED.

THE *Pittsburgh Legal Journal* says:—

"Though a law paper [or one devoted to any other speciality] may be started, it cannot be kept up without money, and though a subscription is a great compliment, the payment of the cash triples the obligation."

Bees in Virgil.

Would any classical bee master kindly favor me with answers to these queries, suggested by Virgil's "Georgic on Bees" (lib. iv.):—

1. Is it a fact that swallows devour bees, according to the lines 15–17.

"Et manibus Procne pectus signata cruentis.
Omnia nam latè vastant, ipsasque volantes
Ore ferunt, dulcem nidis immittibus escam."?

2. Have any modern observers noticed bees carrying stones for ballast in a heavy wind, (lines 194–196.)

——————"et sæpe lapillos,
Ut cymbæ instabiles fluctа jactante saburram,
Pollunt: his sese per inania nubila librant,"

as Aristotle and Pliny state?

3. Do bees live to their seventh year? (line 207.)

"Neque enim plus septima ducetor æstas."?

4. Do cockroaches devour honey in the hives? (line 243.)

5. When there is a pestilence among bees, do they hang together in a mass like a bunch of grapes? (line 207.)

6. Is any modern instance known of a swarm of bees inhabiting a dead animal, as Virgil tells us in the story of Aristæus, corroborating what Holy Writ relates of Samson? M. G. W. in "*Science Gossip.*"

VIRGIL ON BEES.—Some years ago the statements in the Fourth Georgic drew my attention to some of the queries proposed by M. G. W. in the February number of SCIENCE GOSSIP. I have been a bee master for some six years, and as the overhanging roof of my vicarage affords ample shelter for house martins and swallows, I have had a limited opportunity of observing more particularly the conduct of those birds towards the insect. Assuming that "procne" is used in the limited sense of "swallow," as known at the present day, and that it does not refer to some other bird of wheeling flight and blood stained plumage, I am led to conclude that this bird does not feed upon bees. At all events, I have given especial attention to this very point, and not a single probable instance has come within my personal knowledge. It is worthy of note, however, that the Rev. J. G. Wood points out, as a remarkable fact in natural history, that the swallow (*Hirundo rustica*) devours the stingless bees [drones], whilst it allows the others to go unharmed, and he thinks that this fact may possibly be a proof of the instinctive knowledge of the bird. If this be true, it would lead us to qualify, at least, the poet's words. Whilst, however, one should be mindful of the difficulty of observing correctly, and of the weight of such authorities, I should be disposed to question both statements, or, at all events, to require evidence in support of them.

Honey bees, I should say, never carry "lapillos" in high winds; but there are other species, it is well known, which build nests with sand and other hard materials, and which, while carrying them for this purpose, were probably mistaken for the honey bee.

The statement of the writer in the "*Encyclopædia Britannica,*" who says "*that the bee seldom dies a natural death*" must be received with caution. Judging from analogy, the limitation of life is highly probable, for whilst it may be conceived that no individual insect of any species lives a month longer than the others of the same species, one can hardly suppose an exception in the case of the bee. Of one of my own hives it may be said *septima ducetor æstas*, and though I believe that some of the very individuals which occupied it more than six years ago still form part of the population, there are nevertheless strong proofs of the truth of the poet's words, and that the first generation is rapidly passing away as its seventh summer approaches.*

The subjects of the other queries have not come within the limit of my experience and observation.—*Ben Snow, Burton Vicarage, Sleaford.* "SCIENCE GOSSIP."

* This writer must have "optics sharp, I ween."

Crimson Clover.

This is a forage plant certainly meriting more attention than it has yet received from the farmers in this country, many of whom seem to be very blindly attached to a fixed rotation of crops in their husbandry, perhaps because even a slight deviation makes it troublesome to rearrange a suitable course. But occasionally unfavorable weather, or the failure of a particular crop makes a change indispensable or the introduction of some other crop desirable, and it may be well to resort here, on such occasions, to that which is used elsewhere with advantage—especially when it is of a nature to subserve two valuable purposes. As an annual, producing excellent fodder and abundant bee pasturage, the crimson clover is regarded as of high importance by European farmers and beekeepers. Colman, in his reports on "*European Agriculture,*" gives the following account of it.

CRIMSON CLOVER. (*Trefolium Incarnatum.*) This is an annual plant, presenting, in its blossoming, a beautiful crimson flower in the shape of a cone. It is a very productive plant, and is principally valuable as a green feed. Made into hay, it is deemed superior to the common clovers. Here it is sometimes sown upon a wheat or grain stubble, the stubble being simply harrowed and the seed sown, and it is then bush-harrowed and rolled. This gives a good crop for green food the ensuing spring. It is said to be a fortnight earlier than lucern. Few things in the vegetable world present a richer appearance than a field of crimson clover in full flower. It is sometimes drilled at the distance of eight inches in the rows. The quantity of seed is from eighteen to twenty pounds to an acre, when sown broadcast; less would be required when drilled. Its chief value is its quick return; as, when sown in autumn, it may be mowed so early the next season, as to leave a favorable opportunity for fallowing the land for wheat. In this respect, however, I cannot perceive that it has any advantage over our common June clover, and I should have great distrust of its endurance under the severe frosts of New England. I have tried it myself on a small scale, but then it was sown early in the spring.

Furman's Apiary.

We had the pleasure one day last week of visiting, in company with several of our citizens, the extensive apiary of Mr. W. H. Furman, of Clinton Township, and witnessing the interesting operation of honey making, Italian Queen raising, and the *modus operandi* of removing the comb, extracting the honey from it and replacing it in the hive. The party presented a decidedly unique appearance, not to say grotesque, when equipped for examining the mysteries of the interior of a bee hive; the wire hats covering the head and face, with ample curtain to protect the neck and shoulders, causing us to present the appearance of a crowd of fantastics, rather than a party of investigators of a scientific operation. To describe all that Furman showed and explained to us would require an elaborate treaties on the apiary rather than the short local item this is intended to be. So, we will only say on this particular point that all passed off pleasantly and satisfactorily. If we may except one of the party who got stung on the nose, another on the lip and several others whose attention seemed more intently directed to watching the bees flying round their heads and lighting upon their masks then to their operation in the hive. Mr. Furman has about 250 stands of bees mostly Italian, all in good working order, and which are doing exceedingly well this season, making a more than ordinary quantity of a superior quality of honey. To show the results of the labors of these busy little fellows, we give the following table of the increase of a single hive of average strength. The hive was placed upon a pair of platform scales, and the weight taken at various intervals as follows:

June 21st at 2 o'clock P. M. hive weighed 101 lbs., removed 15 lbs.; leaving 86 lbs. In the evening the hive weighed 88½ lbs.

June 22d,	gained	8 lbs.
" 23d,	"	5 "
" 24th, (rained),		1½ "
" 25th,	gained	6½ "
" 26th,	"	5½ "
" 27th,	"	4½ "
" 28th,	Removed	26 lbs.

and in the afternoon of same day they stored 1½ lbs.

29th,	stored	13½ lbs.
30th,	"	10 "
	Removed	22 "

When the party was there, the hive was weighed at a quarter to one o'clock, and again at 25 minutes to 2 o'clock, and in the interval—a period of 40 minutes, it had gained one pound. This, we think, is making honey at a pretty lively rate. Mr. Furman uses the Langstroth hives exclusively and prefers them to all others. He is now engaged in removing the honey from the lower frames by the process of centrifugal motion which leaves the comb whole and the cells undisturbed. The combs thus freed from the honey are replaced in the hives and the bees go to work and fill them up again. They are thus relieved of the labor of making new comb, and the result is a great increase in the deposit of honey, while the honey obtained by the process referred to is perfectly free from all impurities, cleaner and better than any strained honey. Mr. Furman will have several tons of honey for market this season, and will reap a rich reward for his labors. After partaking of a most excellent dinner, the party returned, all feeling (if we may except the gentleman with the hypertrophied proboscis) that the occasion was as good as a 4th of July.

How to judge the Quality of Honey.

This is an interesting question, and one we believe, not generally understood. Honey, of course, is judged *mainly* by its color. But owing to the fact that there is often a great difference in the color of the comb, and the additional fact that bees often put white honey in dark combs, and *vice versa* it is manifest that very great care must be exercised in taking into account both the comb and the honey. The proper way to judge honey is to strain it into glass jars. You can then readily judge of its color. But then there are at least two other qualities to be considered—thickness and flavor. In judging of its thickness, it is necessary for the judge to know whether that quality was imparted in the first instance, or whether it is due to the action of light; for light (the chemical rays) acts upon honey much as it does on the iodide of silver, or the photographer's excited collodion plate.

Take two bottles of honey from the same comb, seal them up perfectly tight, and keep them both at the same temperature—only, one in the sunlight, and the other in a dark room, and the former will gradually grow thick, and finally assume a semi-crystalline shape; while the other will retain its original fluidity. This is one reason why bees always work in the dark, and why honey should always be kept in the dark, or in opaque vessels.

It would be very improper to award a first prize to a jar of honey that had become thickened by the action of light, because it thereby becomes deteriorated. Still, honey to be superior, should not be very thin. Flavor is also a very important consideration, and must always be required. A good flavored dark honey may sometimes be superior to a white article which *looks* much better. The thickness and thinness of honey depends much upon the source from which it is gathered, rather than upon the secretive action of the bee, whether we admit that the insect *makes* or simply *gathers* it.—*Scientific Press.*

The Honey Guide.

The Honey Guide is an extraordinary bird. How is it that every member of its family has learned that all men, white or black, are fond of honey? The instant the little fellow gets a glimpse of a man, he hastens to greet him with the hearty invitation to come—Albia translated it—to a bee's hive and take some honey. He flies on in the proper direction, perches on a tree, and looks back to see if you are following him; then on to another, and another, until he guides you to the spot. If you do not accept his first invitation, he follows you with pressing im-

portunities, quite as anxious seemingly to lure the stranger to the bees' hive, as other birds are to draw him away from their own nests. Except while on the march, our men were sure to accept the invitation, and manifested the same by a peculiar responsive whistle, meaning, as they said, "all right, go ahead, we're coming." The bird never deceived them, but always guided them to a hive of bees, though some of these had but little honey in store. Has this peculiar habit of the honey guide its origin as the attachment of dogs, in friendship for man, or in love for the sweet pickings of the plunder left on the ground? —*Livingstone's "Zambesi."*

A Queen Bee "Mired."

In October I found most of my stocks wanted feeding, to enable them to stand through the winter. My plan is to make a syrup of two pounds of lump sugar to one pint of water; this I place on a feeding-pan on the top of the hive, opening the aperture so that only the bees in the hive can get at it. They will take it freely, if the weather is warm, and store it for winter use. I put some pieces of old comb, which I always keep by me for this purpose, into the pan, to prevent the bees drowning. I was very near losing one of my best stocks, this season in feeding them; not having put sufficient comb in the pan, the weather suddenly changed to cold, and the bees ceased to take the food in. It was quite by chance I went to look how they were going on, when I was very much surprised to find the queen bee struggling in the syrup and nearly dead. I was not long in extricating her from her perilous situation, and a little warmth soon revived her; and on restoring her to her loving subjects they immediately began to lick her, and she soon retired out of sight. I never saw a queen bee at the feeding-pan before.—J. P.—in "*Science Gossip.*"

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Dec., 1871.

L. L. Langstroth's Patent

ON

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FOR BEE HIVES.

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